FUNDAMENTALS OF AIR ASSAULT OPERATIONS

SUBCOURSE NO. IN 0800

US Army Infantry Officer

United States Army Infantry School
Fort Benning, Georgia

Six Credit Hours

GENERAL

This subcourse is designed to teach the infantry officer the purpose and planning considerations of the fundamentals of air assault operations, also the techniques for preparing related orders that coincide with the conduct of air assault operations. Air assault operations insert troops and equipment into positions of tactical importance with great speed, but at great risk. It is vitally important that the infantry officer knows the characteristics of air assault operations and the considerations and planning procedures for operations in the AirLand Battle concept. He must also know the five plans, which are the ground tactical plan, landing plan, air movement plan, loading plan, and staging plan, that make up the complete air assault operations plan.

The first lesson will discuss the characteristics of air assault operations and how they relate to the fundamentals of AirLand Battle doctrine; the capabilities, limitations, and vulnerabilities of air assault operations; and employment considerations and guidelines. This lesson will also teach the troop leading procedures, planning considerations, and the sequence of action in preparing for an air assault operation. It will also teach intelligence preparation of the battlefield (IPB).

The second lesson will discuss the purpose of and planning considerations for the five basic plans--ground tactical plan, landing plan, air movement plan, loading plan, and staging plan--which together comprise the air assault operations plan.

TASK: Identify the characteristics of and considerations and procedures of planning for air assault operations. Also identify the purpose of, and planning considerations for, the five basic plans--a ground tactical plan, a landing plan, an air movement plan, a loading plan, and a staging plan--which together comprise the air assault operations plan.

CONDITIONS: Given the subcourse material, a training scenario, and extracts, as applicable, the student will complete the examination at the end of this subcourse.

STANDARD: The student will successfully answer 75 percent of the questions on a multiple-choice based examination for subcourse IN 0800 by identifying the characteristics of and procedures of planning for air assault operations, and identifying the planning considerations for the five basic plans--a ground tactical plan, a landing plan, an air movement plan, a loading plan, and a staging plan--which together comprise the air assault operation plan.

This objective supports military qualification standards (MQS) tasks:

FM 90-4, Select air/ground movement routes using a map.

FM 90-4, Provide aviation input to AMTF operations orders.

FM 90-4/100-5, AirLand Battle.

FM 100-5, AirLand Battle doctrine.

FM 90-4/100-5, Describe the application of the US Army's AirLand Battle doctrine.

TABLE OF CONTENTS

LESSON 1

FUNDAMENTALS OF AIR ASSAULT OPERATIONS

TASK

Identify the characteristics, considerations, and procedures of planning for air assault operations.

CONDITIONS

Given the subcourse material for this lesson, a training scenario, and extracts, as applicable, the student will complete the practice exercise at the end of this lesson.

STANDARD

The student will demonstrate his comprehension and knowledge of the task by identifying the characteristics, considerations, and procedures of planning for air assault operations.

REFERENCES

FM 90-4
FM 100-5

Learning Event 1:
IDENTIFY THE CHARACTERISTICS OF AIR ASSAULT OPERATIONS AND HOW THEY RELATE TO THE FUNDAMENTALS OF AIRLAND BATTLE DOCTRINE

The US Army has a doctrine for everything, from fixing trucks to fighting wars. These doctrines assure that whatever is done in the Army, from simple tasks to large-scale operations, is done with some degree of uniformity so that different units can do their jobs and still mesh as an army.

When it comes to operating on the modern battlefield, the Army's doctrine is called AirLand Battle. Everything that is done on the battlefield--including air assault operations--must be founded in the AirLand Battle doctrine.

AIRLAND BATTLE DOCTRINE

AirLand Battle is the US Army's basic fighting doctrine. It reflects the structure of modern warfare, the dynamics of combat power, and the application of classical principles of war to contemporary battlefield requirements. The term **AirLand Battle** indicates the three-dimensional nature of modern warfare.

All ground actions above the smallest engagements will be greatly affected by supporting air operations of one or both combatants. This means that the dynamics of combat power operate in more than just the ground dimension.

DYNAMICS OF COMBAT POWER

The dynamics of combat power decide the outcome of campaigns, major operations, battles, and engagements. Combat power is the ability to fight. It measures the effect created by combining maneuver, firepower, protection, and leadership in combat actions against an enemy in war. Leaders combine maneuver, firepower, and protection capabilities available to them in countless combinations appropriate to any particular situation.

At both the operational and tactical levels, the generation of combat power requires the conversion of the potential of forces, resources, and tactical opportunity into actual capability through violent and coordinated action concentrated at the decisive time and place. Superior combat power is generated through a commander's skillful combination of the elements of maneuver, firepower, protection, and leadership in a sound plan flexibly but forcefully executed.

This brings up the subject of maneuver.

Maneuver

Maneuver is the movement of forces in relation to the enemy to secure or retain positional advantage. It is the dynamic element of combat--the means of concentrating forces at the critical point to achieve the surprise, psychological shock, physical momentum, and moral dominance which enable smaller forces to defeat larger ones. The effects of maneuver may be achieved without movement by allowing the enemy to move into a disadvantageous position, as in an ambush or with stay-behind forces.

Maneuver occurs at both the operational and tactical levels. Operational maneuver seeks a decisive impact on the conduct of a campaign. It attempts to gain advantage of position before battle and to exploit tactical successes to achieve operational results. Tactical maneuver seeks to set the terms of combat in a battle or engagement. It is the means of gaining and sustaining an initiative, exploiting success, preserving freedom of action, and reducing the vulnerability of friendly forces. At both levels, effective maneuver is vital to achieving combat power.

When maneuver is understood, you can see how it interrelates to firepower.

Firepower

Firepower provides the destructive force essential to defeating the enemy's ability and will to fight. It facilitates maneuver by suppressing the enemy's fires and disrupting the movement of his forces. Firepower exploits maneuver by neutralizing the enemy's tactical forces and destroying both his ability and his will to fight. It may also be used independently of maneuver to destroy, delay, or disrupt uncommitted enemy forces.

Firepower supports friendly operational maneuver by damaging key enemy forces or facilities, creating delays in enemy movement, complicating the enemy's command and control, and degrading his artillery, air defense, and air support. At the operational level, firepower can also disrupt the movement, fire support, command and control, and sustainment of enemy forces.

Maneuver and firepower both need protection to be effective.

Protection

Protection is the conservation of the fighting potential of a force so that it can be applied at the decisive time and place. It has two components. The first includes all actions that are taken to counter the enemy's firepower and maneuver by making soldiers, systems, and units difficult to locate, strike, and destroy. These actions include security, air defense, dispersal, cover, camouflage, deception, suppression of enemy weapons, and mobility.

Protection's second component includes actions that keep soldiers healthy and maintain their fighting morale. It also means guarding their equipment and supplies from loss or damage. Tactical commanders care for a soldier's basic health needs and prevent unnecessary exposure to debilitating conditions. They consider the welfare and morale of the soldiers and try to build cohesion and esprit in units. Operational commanders ensure systems are in place for adequate medical care, expeditious return of minor casualties to duty, and preventive medicine. They also protect stocks of supplies and ensure proper distribution.

Maneuver, firepower, and protection are not much good, however, if leadership is ineffective.

Leadership

The most essential element of combat power is competent and confident leadership. Leadership provides purpose, direction, and motivation in combat. The leader determines the degree to which maneuver, firepower, and protection are maximized, ensures these elements are effectively balanced, and decides how to bring them to bear against the enemy.

In the current conditions of combat, no challenge exceeds leadership in importance. The personal influence of commanders, whether of large joint and combined forces, field armies, corps, or divisions, will have a major bearing on the outcomes of battles and campaigns. Lower level leaders will have a similar impact upon the outcomes of the smaller engagements that make up battles.

Leaders develop potential combat power in their units through preparation prior to battle. This includes many matters of long-term concern to the Army--force design, equipment design, and procurement, for example. Tactical commanders have a more immediate perspective--planning, logistical readiness, training, and motivation are among their concerns.

In the final analysis, and once the force is engaged, superior combat power derives from the courage and competence of soldiers, the excellence of their training, the capability of their equipment, the soundness of their combined arms doctrine, and above all the quality of their leadership.

With these principles understood, you are ready to see how air assault operations fit into the AirLand Battle scene.

AIR ASSAULT OPERATIONS IN THE AIRLAND BATTLE

Army aviation and infantry units can be fully integrated with other members of the combined arms team to form powerful and flexible air assault task forces that can project combat power throughout the entire depth, width, and breadth of the modern battlefield with little regard for terrain barriers. The unique versatility and strength of an air assault task force is achieved by combining the capabilities of modern helicopters--speed, agility, and firepower--with those of the infantry and other combat arms to form tactically tailored air assault task forces that can be employed in low-, mid-, and high-intensity environments.

In air assault operations, assault forces (combat, combat support, and combat service support), using the firepower, mobility, and total integration of helicopter assets, maneuver on the battlefield under the control of the ground or air maneuver commander to engage and destroy enemy forces or to seize and hold key terrain. More than just air movements of men and materiel, air assault operations are deliberate, precisely planned, and vigorously executed combat operations designed to allow friendly forces to strike over extended distances and terrain barriers to attack the enemy when and where he is most vulnerable.

An air assault task force (AATF) is designed to accomplish an air assault. An AATF is a group of integrated forces tailored to a specific mission and under the command of a single headquarters. It may include some or all elements of a combined arms team. The ground or air maneuver commander, designated the AATF commander (AATFC), commands the task force. He may combine infantry companies with aviation assets that can be employed singly or in multiples.

To know how to use air assault operations to their fullest, you must know their capabilities, limitations, and vulnerabilities.

CAPABILITIES, LIMITATIONS, AND VULNERABILITIES

Air assault task forces provide commanders with truly unique capabilities. They can extend the battlefield, move, and rapidly concentrate combat power like no other available forces. First, you must know what an air assault task force can do and what are its capabilities.

Capabilities

Air assault forces can -

- Attack enemy positions from any direction.
- Delay a much larger force without becoming decisively engaged.
- Overfly or bypass barriers and obstacles and strike objectives in otherwise inaccessible areas.
- Conduct deep attacks and raids beyond the forward line of own troops (FLOT) or line of contact (LC), using helicopters to insert and extract forces.
- Rapidly concentrate, disperse, or redeploy forces to extend the area of influence.

- Provide responsive reserves allowing commanders to commit a larger portion of their forces to action.
- React rapidly to tactical opportunities and necessities, for example, to conduct exploitation and pursuit operations.
- Rapidly place forces at tactically decisive points in the battle area.
- Provide surveillance or screen over a wide area.
- React to rear area threats.
- Rapidly secure and defend key terrain (such as crossing sites, road junctions, and bridges) or deep objectives.
- Bypass enemy positions and achieve surprise.
- Conduct operations under adverse weather conditions and at night to facilitate deception and surprise.
- Conduct fast-paced operations over extended distances
- Conduct economy-of-force operations over a wide area.
- Rapidly reinforce committed units.

Air assault task forces do have limitations. These must be understood and appreciated for an operation to be properly planned and executed.

Limitations

An air assault task force is light, mobile, and relies on helicopter support throughout any air assault operation. As such, they may be limited by -

- Adverse weather, extreme heat and cold, and other environmental conditions such as blowing sand and snow that limit flight operations or helicopter lifting capability.
- Reliance on air lines of communication.
- Hostile aircraft, air defense, and electronic warfare actions.
- Reduced ground mobility once inserted.
- Availability of suitable landing zones (LZs) and pickup zones (PZs).
- Available nuclear, biological, and chemical (NBC) protection and decontamination capability.
- Reduced support from vehicle-mounted antitank weapon systems. These systems would be organic to air assault units, but are generally not available to AATFs.
- Obscuration of the battlefield which limits helicopter flights (as from fog, smoke, etc.).
- High fuel (JP4) and ammunition consumption rates.

In addition to their inherent limitations, you must know that AATFs are indeed vulnerable to certain enemy actions.

Vulnerabilities

An AATF uses helicopters to move to and close with the enemy. Initial assault elements must be light and mobile. They are often separated from weapon systems, equipment, and materiel that provide protection and survivability on the battlefield. Consequently, an AATF is particularly vulnerable to enemy -

- Attack by aircraft and air defense weapon systems during the movement phase.
- Attack by NBC systems, due to their limited NBC protection and decontamination capabilities.
- Attacks (ground, air, or artillery) during the loading and unloading phases and at other times when the infantry is not dug in.
- Air strikes, due to limited availability of air defense artillery (ADA) weapon systems that can be deployed with an AATF.
- Electronic warfare (jamming), due to the heavy reliance on radio communications for command and control (C^2).
- Artillery or other fires that may destroy helicopters and air assault forces during PZ or LZ operations.
- Small arms fire that presents a large threat to helicopters.

Once the capabilities, limitations, and vulnerabilities of AATFs are understood, you can better evaluate the considerations and guidelines for employing an AATF.

EMPLOYMENT CONSIDERATIONS AND GUIDELINES

Air assault operations are high risk, high payoff operations. When properly planned and vigorously executed they allow commanders to apply the basic tenets of AirLand Battle doctrine. An AATF can dramatically extend a commander's area of operation. This lets him execute AirLand Battle doctrine in areas ranging beyond the capability of more conventional forces.

Tactical employment considerations tell you how to achieve short-range objectives.

Tactical Employment

The tactical employment of an AATF is different from those of light and other dismounted infantry. An AATF is employed judiciously and only on missions that require -

- Massing or shifting combat power rapidly.

- Using surprise.
- Using flexibility, mobility, and speed.
- Gaining and maintaining the initiative.
- Extending the depth, width, or breadth of the battlefield.

An AATF is not merely a tactical unit, however. AATFs can be used effectively to achieve operational goals. There are, correspondingly, operational guidelines.

Operational Guidelines

An AATF is normally a highly tailored force specifically designed to hit fast and hard. It is best employed in situations that give it a calculated advantage due to surprise, terrain, threat, or mobility. The principles of employment are basic guidelines that govern the planning and execution of air assault operations. They are:

Mission. The AATF should normally be assigned only missions that take advantage of their superior mobility. They should not be employed in roles requiring deliberate operations over an extended period of time.

Combined arms team. The air assault forces always fight as combined arms teams.

Aviation assets. The availability of critical aviation assets is a major factor in any operation.

Planning and execution. Air assault planning must be centralized and precise. Execution must be aggressive and decentralized.

Weather. Air assault operations may be conducted at night or during adverse weather. In those cases, however, they require more planning and preparation time.

Unit integrity. Unit tactical integrity must be maintained throughout an air assault. Take load planning as an example. Infantry squads are normally loaded intact on the same helicopter and platoons in the same serial. This ensures fighting unit integrity when they land.

Fire support. Fire support planning must provide for suppressive fires along flight routes and in the vicinity of landing zones. Priority for fires must be the suppression of enemy air defense systems.

Infantry operations. Infantry unit operations do not change fundamentally by integrating aviation units with infantry. Tempo and distance do change dramatically, however.

Mechanized infantry. Mechanized infantry units are not frequently employed in air assault operations. When they are, such operations conducted on a limited scale may be the decisive form of combat. Typical air assault operations conducted by mechanized forces are river-crossing operations, seizure of key terrain, raids, and rear area combat operations.

Enemy. An AATF is employed most effectively in environments where the enemy -

- Has limited lines of communication available.

- Lacks air superiority.
- Lacks effective air defense systems.

These are the foundations of an air assault operation. On these you can build the troop leading procedures, planning considerations, and sequence of actions which go into preparing an air assault operation. Those items are the topics of the next learning event.

Learning Event 2:
IDENTIFY THE TROOP LEADING PROCEDURES, PLANNING CONSIDERATIONS, AND SEQUENCE OF ACTIONS IN PREPARING FOR AN AIR ASSAULT OPERATION

The AATFC must prepare for air assault operations by following troop leading procedures and organizing for a specific mission. These preparations include intelligence preparation of the battlefield, the threat, task organizing for air assault operations, and command, control, and communications (C^3).

Before you can plan an operation, you need to know what to expect on the battlefield. This is the function of intelligence preparation of the battlefield.

INTELLIGENCE PREPARATION OF THE BATTLEFIELD (IPB)

Intelligence preparation of the battlefield is a systematic approach to analyzing the enemy, weather, and terrain in a specific geographic area. It integrates enemy doctrine with the weather and terrain as they relate to the mission and the specific battlefield environment. The information from IPB is used to determine and evaluate enemy capabilities, vulnerabilities, and probable courses of action. IPB results in a graphic intelligence estimate that portrays probable enemy courses of action. Once hostilities begin and current data become available, the IPB intelligence estimate becomes dynamic, changing with the immediate battlefield situation.

IPB is a sequential process of intelligence analysis that focuses on the assigned areas of operations and interest, and on the enemy forces that are expected to be operating in those areas. The five logical steps of IPB include threat evaluation, areas of operation and interest evaluation, terrain analysis, weather analysis, and threat integration.

IPB exists to let planners and commanders see what is out there. As such, the results of IPB need to be displayed, and are best displayed, in a graphic form.

Graphics

Using graphics is a key to IPB. Threat evaluation and threat integration are accomplished through analytical techniques called templating. A template is a graphic illustration of enemy force structure, deployment, or capabilities, normally drawn to scale. It provides a basis for command judgment and decisions affecting resource allocation. It is used as a comparative data base to integrate what is known about the enemy with a specific weather and terrain scenario. Templates allow planners to visualize

enemy capabilities, predict likely courses of action before the battle, and confirm or refute them during combat. The four principal templates developed during the IPB process are -

- Doctrine. Enemy doctrinal deployment for various types of operations without constraints imposed by weather and terrain. Composition, formations, frontages, depths, equipment numbers and ratios, and high-value targets (HVTs) are displayed.
- Situation. Depicts how the enemy might deploy and operate within the constraints imposed by the weather and terrain.
- Event. Depicts locations where critical events and activities are expected to occur and where critical targets will appear.
- Decision points. Depicts decision points keyed to significant events and activities; this is the intelligence estimate in graphic form.

Weather analysis plays an important part, not only in the graphic display, but also in planning considerations.

Weather

Planners must not underplay the effects of weather on air assault operations. Weather has a significant impact on both friendly and enemy air capabilities. Temperature and humidity combinations affect helicopter lift capabilities because of density altitude conditions. Weather factors also affect conditions of PZs and LZs, air avenues of approach, and threat air defense weapons.

All these factors come together in products that are used to plan air assault operations.

IPB Products

The results of the IPB are routinely used by air assault task forces throughout the planning phases. Air assault operations are high-risk operations at best, and they should be planned with the best possible intelligence support available. Brigades and battalions perform IPB on an informal basis as time and resources permit. Corps and division G2s must be prepared to provide detailed IPB support to any subordinate unit that has been assigned an air assault mission.

Of course, the primary consideration in planning an air assault operation is understanding the threat--his capabilities, his battle doctrine, and his available resources.

THE THREAT

Primary threat tactics against air assault operations can be broken down into four major areas:

- Air defense fires (including small arms).
- Fixed- and rotary-wing aircraft.

- Electronic warfare.
- Threat reaction to landing zone operations.

Vulnerability to air defense fires must be recognized and compensated for by effective suppressive measures and increased emphasis on accurate, timely intelligence of the enemy.

The capabilities and limitations of threat aircraft in the area of operation must be understood. All measures which can minimize the risk of encounter must be taken.

Planners must consider threat electronic warfare (EW) capabilities that can influence the air assault operation, and the appropriate electronic countermeasures to use. These EW capabilities include, but are not limited to, jamming, direction finding and monitoring of radio communications, and jamming or direction finding of friendly radars.

Also, the planning phase of the air assault operation must include analysis of threat capabilities to interdict friendly landing zones with ground forces, artillery, and close air support.

A major part of IPB is understanding the enemy. Knowledge of enemy doctrine, tactics, and equipment enables an air assault task force to find and exploit weak points.

All of this information allows you to begin organizing for the air assault operation.

TASK ORGANIZING FOR AIR ASSAULT OPERATIONS

Air assault operations are not conducted by pure units, but rather by tactically tailored AATFs (brigade or battalion level) designed to accomplish a specific mission. organizing the task force for combat is a significant action. Predesignated and well-understood command and support relationships ensure that the force will fight as a cohesive, coordinated team.

You need to understand some basics of task organizing before you can organize an AATF properly.

General

The formation of an AATF will be directed by a headquarters no lower than division level, or a headquarters which can allocate dedicated aviation resources.

The directing or establishing headquarters allocates assets, defines authority and responsibility by designating command and support relationships, and forms the AATF early in the planning stage. Divisional aviation assets in other than the air assault division may be inadequate therefore, additional aviation resources must be requested from corps units.

Battalion is the lowest level staffed with sufficient personnel to plan, coordinate, and control an air assault operation. When company-sized operations are conducted, the predominance of planning occurs at battalion level or higher.

With all this as background, the topic can turn to specific considerations for developing an AATF.

Considerations for Developing an Air Assault Task Force:

The availability of aviation assets is normally the major factor in determining AATF organization.

The AATF must provide a mission-specific balance of mobility, combat power, and staying (sustaining) power.

The required combat power should be delivered to the objective area as soon as possible, consistent with aircraft and PZ capacities, to provide surprise and shock effect.

To perform its mission, an air assault task force must arrive intact at the LZ. The force must be tailored to provide security and protection from the PZ, throughout the entire flight route(s), and at the LZ.

In addition to the traditional command and support relations, one nonstandard command relationship, attached for movement, is used extensively during air assault operations. Under this relationship, some elements (such as field artillery [FA], ADA, military intelligence [MI], and engineers) may be attached to maneuver elements for movement only. This relationship facilitates command and control, movement planning, and local security of attached elements. Attachment would be effective from the planning phase until landing in the LZ, linkup with parent unit, or as predesignated by standing operating procedure (SOP) or operation order (OPORD).

The complete AATF is usually formed during the planning phase.

The task organization must be determined and announced early in the planning process. It may be included in the warning order.

The AATF is normally organized with sufficient combat power to seize initial objectives and protect LZs, and with sufficient combat service support (CSS) and accompanying supplies to sustain a rapid tempo until follow-on or linkup forces arrive or until the mission is completed. An effective command and control system must be developed for all air assault operations. The AATFC must bring command and control considerations into play as he develops his task organization.

Unit tactical integrity must be maintained throughout an air assault. When planning loads, squads are normally loaded intact on the same helicopter, platoons in the same serial (essentially, a squad of helicopters), units in the same lift (all the helicopters committed to one round-trip flight essentially, a platoon of helicopters). This ensures unit integrity upon landing.

Combat support elements are normally placed in direct support (DS) to the task force in order to ensure close coordination and continuous, dedicated support throughout an operation.

As you might expect, an AATF is a complex group with a high number of people involved. These are some of the higher profile jobs in an AATF.

The Air Assault Task Force

The AATF is a tactically tailored combination of combat, combat support (CS), and CSS elements under the command and control of a single headquarters or command group.

The AATF command group and staff. The AATFC is normally the infantry brigade or battalion commander whose own unit(s) forms the nucleus or predominance of forces in the AATF. He commands the air assault operation and is responsible for its overall planning and execution. He controls all units assigned, attached, or under operational control (OPCON) to the AATF. He also establishes mission priorities for those units in DS or general support (GS) of the AATF.

The air mission commander. The air mission commander (AMC) is designated by the supporting aviation brigade or battalion commander and is subordinate to the AATFC. He controls all Army aviation assets in support of the AATF, ensures that aviation operations are conducted according to the AATFC's directives, serves as the AATFC's advisor on aviation matters, and assists the AATFC with planning.

Aviation liaison officer. An aviation officer (LO) should be provided to the AATF from the supporting aviation unit and should be considered a special staff officer. His role is to advise the AATFC on all matters relating to Army aviation and to develop jointly, along with the AATF S3 Air, the detailed plans necessary to support the air assault operation. During the execution phase, he should be available to assist the AATFC or S3 Air in coordinating the use of aviation assets.

The AATFC, the AMC, and their respective battle staffs must consider several air-assault-unique factors, as well as those of mission, enemy, terrain, troops, and time available (METT-T), before deciding on the exact AATF task organization. These include both general and organization-specific factors, which will be discussed shortly.

Figure 1 depicts a typical AATF organization built around an air assault infantry battalion nucleus.

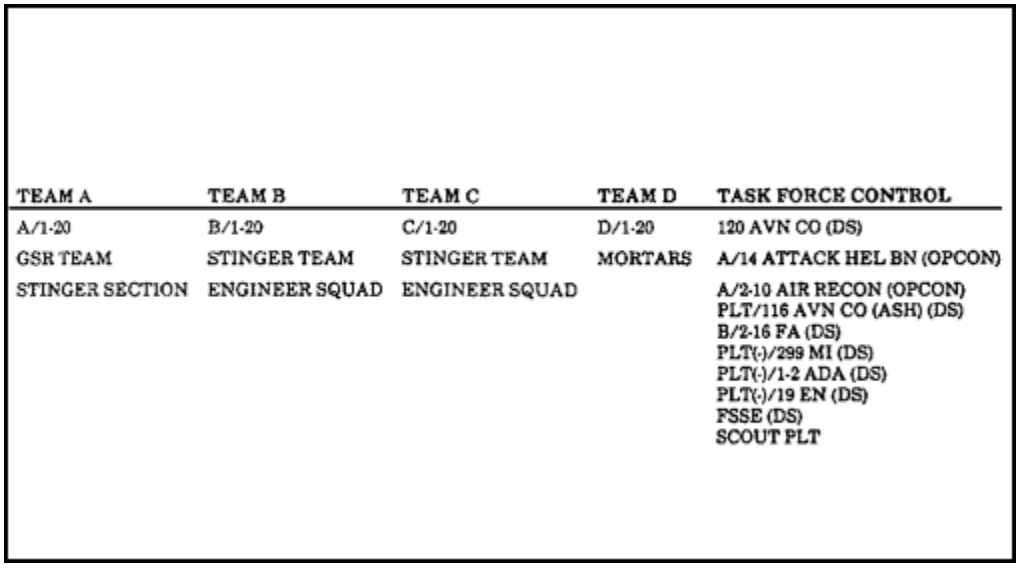

FIGURE 1. TYPICAL AATF ORGANIZATION.

Just as individuals have roles in an AATF, units have roles.

Organization

Each element of an AATF has typical roles, missions, and organization-specific considerations.

Infantry. Infantry elements normally form the nucleus of the AATF. Although nonmechanized infantry is better suited for air assault operations, there will be situations where mechanized units accomplish their mission by capitalizing on the helicopter's mobility.

The disposition of the unit's vehicles is a prime point of consideration. When mechanized infantry units participate in air assault operations, the armored vehicles can be -

- Attached for movement to an assaulting ground element (linkup force).
- Left in an assembly area until the assaulting element returns.
- Repositioned to provide supporting fires for adjacent units or the air assaulting force.

Other factors must be considered:

- Ground mobility is limited once the unit is inserted unless vehicles are provided.
- Communication range is limited to that of portable radios.
- Range of the scout platoon is limited unless its vehicles are lifted into the objective area.
- Antiarmor capability is reduced.
- CS and CSS will be austere.
- Air lines of communication must be planned for sustainment.

Assault (lift) helicopters. The AATF would normally be one or more assault helicopter platoons or companies (depending upon the size of the operation) placed under OPCON or in DS of the AATF for the duration of the operation.

The assault helicopters operate under the control of the AMC who will direct actions based upon the AATFC's order.

Typical lift helicopter missions include -

- Tactical mobility for troops, equipment, and weapon systems by internal and external load.
- Aerial resupply by internal and external loads.
- Backup medical evacuations (MEDEVAC).

Attack helicopters. Attack helicopter companies or an entire battalion may operate under OPCON to the AATF.

Attack helicopter units are normally employed as air maneuver elements in the antiarmor role. However, during air assault operations they also support the lift and assault force by direct and indirect fires in the absence of normal artillery and other fires.

Typical missions for attack helicopters include -

- Protect and escort lift helicopters from the PZ to the LZ as dictated by the enemy.
- Suppress enemy ADA and other weapons en route to and during insertions and/or extractions.

- Provide preparatory and/or suppressive fires in the vicinity of LZs or objectives in the absence of conventional artillery.
- Overwatch the LZ and objective areas to neutralize enemy resistance and block enemy attempts to reinforce the objective area.
- Serve as AATF reserve when facing a motorized or armored enemy.
- Provide reconnaissance and security in the absence of mobile ground scouts or air reconnaissance units.

Air reconnaissance. The AATF would normally receive OPCON of an air reconnaissance team or troop. Air reconnaissance elements provide reconnaissance and limited security for the AATF during all phases of the operation and fill the void created by the absence of mobile infantry scouts.

Their typical missions include -

- Reconnaissance of PZs, flight routes, LZs, and objectives.
- Screening forward (or all-round) of ground forces to provide limited security and early warning.
- Providing security for downed aircraft.

Assault support (medium) helicopters. The AATF may be supported by medium helicopter platoons or companies placed under OPCON or in DS. Medium helicopters are normally employed in follow-on echelons to build combat power and to resupply the AATF. Typical missions include moving -

- Artillery (up to M198 in size and weight) and ammunition.
- Engineer equipment and barrier materials.
- Military intelligence assets.
- All classes of supply.
- Bridging assets.
- NBC defense and decontamination equipment.
- Personnel from secure PZ to secure LZ.

Artillery fire support. Field artillery batteries (or battalions) that can be moved by CH-47 cargo helicopter or that can fire into the air assault objective area are normally attached to or placed in DS of the AATF. Field artillery units in air assault operations must be ready to move quickly and frequently to prepared LZs and objectives and to suppress enemy artillery and air defense fires.

Air assault support missions expected from FA units include -

- Suppression of enemy air defense along flight routes and in the vicinity of LZs.
- Landing zone preparation.
- Conducting artillery raids.
- Delivering the field artillery's family of scatterable mines (FASCAM).

Engineers. An engineer platoon would normally be placed in DS of the AATF. In many situations, engineers would be attached to infantry units for movement but would revert to DS when communications with the parent headquarters is reestablished.

Engineers in the air assault role must be organized to move with infantry and to provide mobility, countermobility, and survivability construction using light equipment (such as chain saws and hand tools), demolitions, natural resources, and ingenuity. Light engineer equipment, such as small earth movers or backhoes, may be moved by medium lift helicopters.

Typically, engineers on an AATF are required to -

- Construct and improve PZs and LZs.
- Construct expedient countermobility obstacles using natural materials and demolitions.
- Help the infantry dig in.
- Emplace point minefields.
- Fight as infantry.
- Breach obstacles.

Air defense. The AATF normally receives, as DS or attached, a tactically tailored ADA team or platoon equipped with light, air-transportable, short-range air defense (SHORAD) systems. Air defense artillery assets must be tailored to place a high reliance on man-portable air defense (MANPAD) systems such as the Stinger missile system and towed Vulcans (if available). Normally, Stinger teams are attached to infantry units for movement.

In air assault operations, SHORAD must fly with the lead elements in order to be in place to protect follow-on echelons in the objective area. Stinger teams are best suited for this role.

Typical air defense missions include providing -

- Point defense of high-value locations including PZs, LZs, objective areas, helicopter rearm-refuel points, and laager sites.
- Provide direct fires for ground defense (Vulcans).

Electronic warfare. A tactically tailored MI platoon would normally be in DS of the AATF if the enemy dictates. The platoon must be equipped with mobile collecting, jamming, and radar hardware that can be moved by available helicopters.

In cases where EW capability is needed, but cannot be supported by mobile equipment, the AATFC should request Quickfix, Guardrail, or other assets from higher headquarters.

Typical EW missions include -

- Disruption of enemy command, control, and communication (C^3).
- Degrading enemy fire support and air defense radio nets.
- Ground radar surveillance.

- Collection of electronic intelligence.

Reserves. Because of their superior mobility, an air assault task force requires smaller reserves than do other forces. During air assault operations, each subordinate maneuver unit may be given an on-order mission to reinforce or assume another unit's mission, or to revert to the task force reserve.

Combat service support elements. The AATF may be supported by a dedicated, tactically tailored forward service support element (FSSE) that provides mission-specific support to the task force throughout the air assault operation.

Three elements are vital to the success of any air assault operation: command, control, and communications.

COMMAND, CONTROL, AND COMMUNICATIONS

Command and control is the process of directing and controlling the activities of military forces in order to attain an objective. An air assault C^2 system includes the procedures, facilities, equipment, and personnel to gather information, make plans, communicate changes, and control all ground and air elements in pursuit of the AATF objective.

Since the battlefield over which the AATF operates may be extended well beyond the norm, special considerations must be given to the command and control of air assault operations. An AATF C^2 system must communicate orders, coordinate support, and provide direction to the AATF in spite of great distances, enemy interference, and the potential loss of key facilities and individuals. Above all, this system must function quickly and effectively, thus allowing the AATFC to receive and process information and to make decisions faster than the enemy.

To be sure the system does function effectively, it must be thoroughly and properly planned.

Command and Control Planning

The AATFC must address C^2 requirements early in the planning phase of any operation. He must establish an effective C^2 system that allows him to control diverse, widely dispersed air and ground elements between the initial PZ and the final objective.

The C^2 system may be subjected to degraded communications due to the extended distances over which the AATF must operate and/or enemy jamming. Although an effective C^2 system must include provisions for two-way radio communications, the AATFC must develop a plan and a system which allows execution despite degraded radio communications.

The key to successful air assault C^2 lies in precise, centralized planning and aggressive, decentralized execution. To ensure successful air assault C^2, the AATFC must keep these aspects in mind:

Effective task organizing. All assets must be tailored into discrete, task-organized elements, each with two-way radio communications, unity of command, clearly defined missions and objectives, and

provisions for maintaining unit integrity throughout the operation. An effective task organization, with each subelement having a clearly defined mission, allows the AATFC the flexibility to decentralize execution and ensure mission success despite degraded communications, the fog of battle, or unexpected enemy reaction.

Precise planning. Air assault operations must be precisely planned and well-briefed before execution so that each subordinate leader knows exactly what is expected of him, knows the commander's intent, and knows he can execute his mission despite the loss of radio communications.

Contingencies or alternatives must be built into each plan to allow for continuation of the mission in a fluid environment. Events must be planned to occur based on time (time driven) or on the execution of a previous event (event driven) so that actions will occur at the specified time or in the specified sequence despite degraded communications. For example:

A time-driven event might be the firing of a landing zone FA preparation precisely from H-5 minutes to H-1 minute. If previously planned, this can be executed with degraded communications.

An event-driven action might be inserting Company B into the alternate LZ if Company A (the lead company) makes enemy contact on the primary LZ. If previously planned, this event will occur properly without the need for lengthy radio communications by the AATFC.

Decentralize control. Although it is centrally planned, air assault execution is decentralized. Subordinate commanders should be given the maximum possible freedom of action (consistent with safety and mission accomplishment considerations) to ensure mission accomplishment.

Establish air assault radio nets. Radio nets to facilitate ground-to-ground, air-to-air, and surface-to-air communications are established to provide for the timely flow of information and backup capability.

In an air assault operation, each individual must know his role. In addition, there are critical functions which must be fulfilled to ensure the operation's success.

Roles of Key Personnel and Critical Modes

There are 11 key players and communications modes in air assault C^2.

Air assault task force commander. The AATFC is normally an infantry brigade or battalion commander who is the overall AATF commander. His presence and role ensures a unity of command throughout the operation. As in any operation, he must move where he can see the battlefield and control the operation. In situations where the enemy situation allows, he would be airborne during the movement and insertion phases. At other times he fights the battle from a tactical command post deployed well forward.

Air assault task force S3. The AATF S3 assists the AATFC in C^2. He normally mans the AATF tactical command post (CP) when the AATFC is airborne.

Air mission commander. The AMC is an aviation unit commander or his designated representative. He is responsible for receiving and executing the AATFC's guidance and directives and for controlling all

aviation elements for the AATFC. His presence ensures unity of effort for all supporting aviation assets. The AMC employs attack helicopters and artillery along the flight route and fights the battle from PZ to LZ while keeping the AATFC informed.

Aviation liaison officer. Although the LO's most critical role is fulfilled during the planning phase, he can be a valuable team member in C^2 if he has access to adequate radio equipment. When he is radio-equipped, the AATFC may use the aviation LO at a critical point to assist in coordinating the execution of the operation.

Lift flight lead. He leads the lift aircraft along the route(s) of flight, adjusting airspeed as necessary to meet preplanned suppression of enemy air defense (SEAD) and preparatory fire schedules.

Air reconnaissance and attack helicopter battle team captains. These are air reconnaissance or attack helicopter platoon leaders or troop (company) commanders who are responsible for the C^2 of their respective elements. They normally respond to the AMC during the movement phase and to the AATFC as subordinate maneuver unit commanders after completion of the air assault insertion.

Pickup zone control officer. A pickup zone control officer (PZCO) is designated for each pickup zone to be used. He organizes, controls, and coordinates operations in the PZ and "pushes" elements out. He operates on the combat aviation net (CAN) and is prepared to assist in executing needed changes. He is the key individual during night operations or when multiple subordinate elements are being lifted from the same PZ.

Subordinate unit commanders. Subordinate unit commanders normally function as they would in any other infantry task force. Each must be prepared, however, to receive other elements for movement.

Tactical command post. The tactical command post (TACCP) provides C^2 for the execution of air assault operations. It must be mobile and well forward. It is normally air assaulted into the objective area soon after the initial echelon, enemy situation permitting. A C^2 helicopter may serve as a TAC CP if enemy air defense systems allow.

Main command post or tactical operations center. The main CP or tactical operations center (TOC) provides control of combat operations when the TAC CP is not deployed, and provides planning for future operations and coordination for support. The main CP has eight functions.

- Monitor current operations and maintain current enemy and friendly situations.
- Gather and disseminate intelligence.
- Keep higher and adjacent organizations informed of the friendly situation; submit recurring reports.
- Provide liaison to higher and adjacent organizations.
- Coordinate combat support, close air support (CAS), aviation, engineer, and ADA, and advise the commander on the use of combat support for current and future operations.
- Monitor airspace management.
- Continue planning for future operations; oversee the preparation of all contingency plans.

- Issue combat orders and warning orders as necessary.

Rear command post. The rear CP is normally located in the field trains and coordinates all logistical and personnel operations and requirements. The administration logistics center is the nerve center of the rear CP and coordinates CSS for the AATF.

All of these people and positions need to be in constant touch. That is the function of the communications system.

Communications

Command and control within the AATF are executed with a variety of communications means to span the full spectrum of air assault operations. To support an AATF over a widely dispersed area, emphasis is placed on compact, lightweight, air-transportable, and long-range equipment. A heavy reliance is placed on single-channel communications such as very high frequency (VHF)/frequency modulation (FM), high frequency (HF)/single sideband (SSB), and tactical satellite communications (TACSATCOM).

Real-time C^2 capabilities will be constrained by the availability of portable, reliable, and secure communications. An AATF must depend largely upon a single-channel radio because of its flexibility, range, and speed of setup.

Subordinate elements in the AATF may range beyond multichannel capabilities and radio transmissions, and transmissions may be unintelligible due to enemy electronic countermeasures (ECM). As a result, subordinate commanders of the AATF will be required to make decisions sometimes without being in contact with the AATFC.

As the AATF fights the battle and distances become extended, communications for C^2 become less sophisticated. The AATF must make extensive use of airborne or unattended FM retransmission, amplitude modulation (AM) capabilities, and TACSATCOM. Ground or air messengers should be used when possible.

With all these messages and channels of information overlapping, some order has to be imposed on the flow of information. That is the purpose of radio nets.

Radio Nets

A dynamic mix of air-to-air, air-to-ground, and ground-toground radio nets is used to provide the necessary responsiveness and flexibility for air assault C^2. Five radio nets are commonly used during air assault operations.

Air assault task force command net. This is an FM command net (ground-to-ground) for an operation. It is normally secure and used by the AATFC to communicate with his subordinate maneuver commanders.

Combat aviation net. This is an FM radio net dedicated to air-to-ground coordination during air assault operations. All aviation elements monitor this net as do the remainder of the AATF elements before and during air movements. Although the CAN may serve as an alternate task force (TF) command net, it must be dedicated primarily to communications between aircraft and the lifted unit. Its use for that purpose ensures that mission and situation changes can be quickly passed to supporting aircraft and that the AATF command net remains clear for use by the AATFC and his subordinate commanders.

Air battle net (ABN). This is an ultra high frequency (UHF) air-to-air command net dedicated to communications between the AMC and all aviation element leaders. All aviation elements monitor this net and receive instructions from the AMC or the AATFC when he is airborne. This net is normally operated on the lift unit's UHF command frequency if a dedicated ABN is not listed in the communicationselectronics operation instructions (CEOI).

Fire support net. This is an FM net operated by the AATF fire support coordinator (FSCOORD). All aviation elements must have access to this net to facilitate calls for fire during movements, insertions, and extractions. An artillery quick-fire net would normally be used when a supporting battery is dedicated to an operation.

Aviation internal nets. These are VHF nets operated by each aviation element leader for his own internal use. VHF radios provide each element leader with a dedicated frequency with which to direct and control individual aircraft, teams, or platoons, and to communicate with air traffic control (ATC) authorities.

All this groundwork goes into operations planning.

OPERATIONS PLANNING

Successful air assault execution is based on a careful analysis of METT-T and detailed, precise reverse planning. Five basic plans that comprise the reverse planning sequence are developed for each air assault operation. They are -

- The ground tactical plan
- The landing plan.
- The air movement plan.
- The loading plan.
- The staging plan.

These plans will be described in detail in Lesson 2. The plans should not be developed independently. They are coordinated and developed concurrently by the AATF staff to make the best use of available time. The ground tactical plan is normally developed first and is the basis from which the other plans are derived.

Planning for air assault operations requires time--time to plan, time to prepare, and time to brief. The AATF uses the sequence of command and staff actions and troop leading procedures common to other combat operations.

Planning for air assault operations is as detailed as time permits and should include completion of written orders and plans. Within time constraints, the AATFC must carefully evaluate capabilities and limitations of the total force and develop a plan that ensures a high probability of success. Often, however, the fleeting nature of tactical opportunities does not permit adequate planning time and the development of detailed written plans and orders.

If time is limited, planning steps may be compressed or conducted concurrently. Detailed written plans and orders may be supplanted by standing operating procedures (SOPs) or lessons learned in previous training. Previous training and the development of SOPs cannot be overemphasized. Units cannot expect to conduct air assault operations successfully, particularly with compressed planning time, without the benefit of previous training.

Many routine tasks related to air assault operations are accomplished above the AATF level. The division is the lowest echelon that can allocate assets, assign appropriate missions, gather required data, and analyze capabilities. For this reason, when an air assault mission is assigned by division or higher level command, that headquarters begins the planning process.

The division uses its resources to gather data and provides planning information to lower echelons, or division may complete the planning tasks itself. When the division does these tasks, subordinate commanders can expend their limited time to accomplish other key planning tasks.

When an infantry unit is given an air assault mission, the assigning echelon provides the latest extended weather forecast up-to-date intelligence (with emphasis on known or suspected enemy air defense systems), initial fire planning, and many of the terrain considerations relevant to the operation. Additional information that is not provided may be requested and/or completed by the AATF. All echelons attempt to reduce the planning burden of subordinate units. The battalion is the lowest level that has sufficient personnel to plan, coordinate, and control an air assault operation. When company-size operations are conducted, the bulk of the planning takes place at battalion and higher headquarters.

All tactical estimates used in troop leading procedures employ the factors of METT-T. The METT-T provides data that is analyzed using the estimate process and from which a decision is made. Applying the factors helps the commander isolate and address significant considerations that affect the mission. The factors of METT-T are considered in each phase of the estimate. The first phase, of course, is the mission.

Mission

Mission analysis is conducted early in the estimate process. The mission involves the critical tasks that must be performed. The tasks are either specified tasks stated by the order or implied tasks that the commander must deduce.

Mission analysis not only determines what must be accomplished, the intent of the commander ordering the mission (the operation's why), and the limitations (when, where, how) placed by higher headquarters, but also provides the basis for deciding on task organization. Once the mission is analyzed and deductions are made, all other factors are considered in terms of their impact on the mission. It is therefore imperative that the mission be understood before continuing the estimate.

Once the mission is understood, you need to evaluate the enemy.

Enemy

The examination of enemy factors should be as detailed as possible depending on the time available. General factors to be considered are -

- Identification: Who is he? Size and type of unit.
- Location: Where is he and where is he going?
- Disposition: How is he organized? What are his formations?
- Strength: His versus friendly forces.
- Morale: Esprit, experience, state of training, regular or reserve.
- Capabilities: EW, NBC, air defense, airborne, airmobile, attack helicopters, mobility (compared to the air assault unit).
- Composition: Armor, infantry (motorized or light), artillery, combat support.
- Probable courses of action: What is his likely mission or objective, and how will he probably achieve it?

When planning an air assault operation, the following factors about the enemy must be considered:

- His air defense weapons and capability.
- His mobility; particularly, his ability to react to an air assault insertion.
- His NBC capability; particularly, his ability to influence potential flight routes and landing zones.
- His capability to interdict or interrupt air assault operations with his helicopters or fixed-wing aircraft.
- His EW capability.

The mission and the enemy are both encountered on the battlefield. The terrain of that battlefield needs to be assessed.

Terrain

In all military operations, terrain analysis is conducted by the criteria described by the acronym OCOKA.

- Observation and fields of fire
- Cover and concealment.
- Obstacles and movement.
- Key terrain.
- Avenues of approach.

In air assault operations, these factors must be analyzed in terms of their effect on the air assault force during pickup, air movement, insertion, and movement to the final objective, and in terms of OCOKA's overall influence on aviation operations.

Observation and fields of fire. These considerations relate to both enemy and friendly forces and, for air assault operations, include -

- Enemy visual observation and/or electronic surveillance of PZs, flight routes, and LZs.
- Enhanced friendly observation provided by scout and aerial field artillery observation helicopters.
- Ease of navigation along flight routes particularly for night or adverse weather conditions.

Cover and concealment. These considerations include -

- Terrain masking for nap-of-the-earth (NOE) flight routes and insertions.
- Covered firing positions for attack helicopters.
- Landing zones which offer infantry cover and concealment following insertion.

Obstacles and movement. While most obstacles can be bypassed by air assault forces, obstacles which affect the ground tactical plan must be considered.

Key terrain. Key terrain is mission-dependent. However, in air assault operations, key terrain is not limited to that which influences the ground tactical plan. It must also be analyzed in terms of -

- Pickup zones and/or landing zones.
- Flight routes.
- Attack helicopter battle positions.
- Occupation by enemy ADA assets.
- Potential forward area rearming and refueling points (FARP).

Avenues of approach. Air and ground avenues of approach are considered in both offensive and defensive operations from friendly and enemy viewpoints. A good avenue of approach for air assault forces offers -

- A reasonable degree of mobility and few if any natural obstacles to the aircraft.
- Little or no canalization.
- Terrain masking that decreases effectiveness of enemy air defense weapons.
- Cover.
- Concealment.
- Good lines of communication and logistics.
- Ease of linkup with other forces when appropriate.

Weather and visibility. Weather information is analyzed for trends (Figure 2). If the operation begins in marginal weather, the commander must consider the possibility that it will deteriorate below acceptable limits during the operation. This may result in an interruption of helicopter support and require changes in planned operations. Considerations include -

- Fog, low clouds, heavy rain, and other factors that limit visibility for aviators.
- Illumination and moon angle during night vision goggle (NVG) operations.
- Ice, sleet, and freezing rain that degrades aerodynamic efficiency.
- High temperatures and/or density altitudes that degrade aircraft engine performance and lift capability.
- Darkness. This is normally an advantage to well-trained aviators and soldiers.
- High winds (large gust spreads).
- Weather conditions that create hazards on PZs and LZs, such as blowing dust, sand, or snow.

Having analyzed the mission, enemy, and terrain, you need to determine the troops available to the AATF.

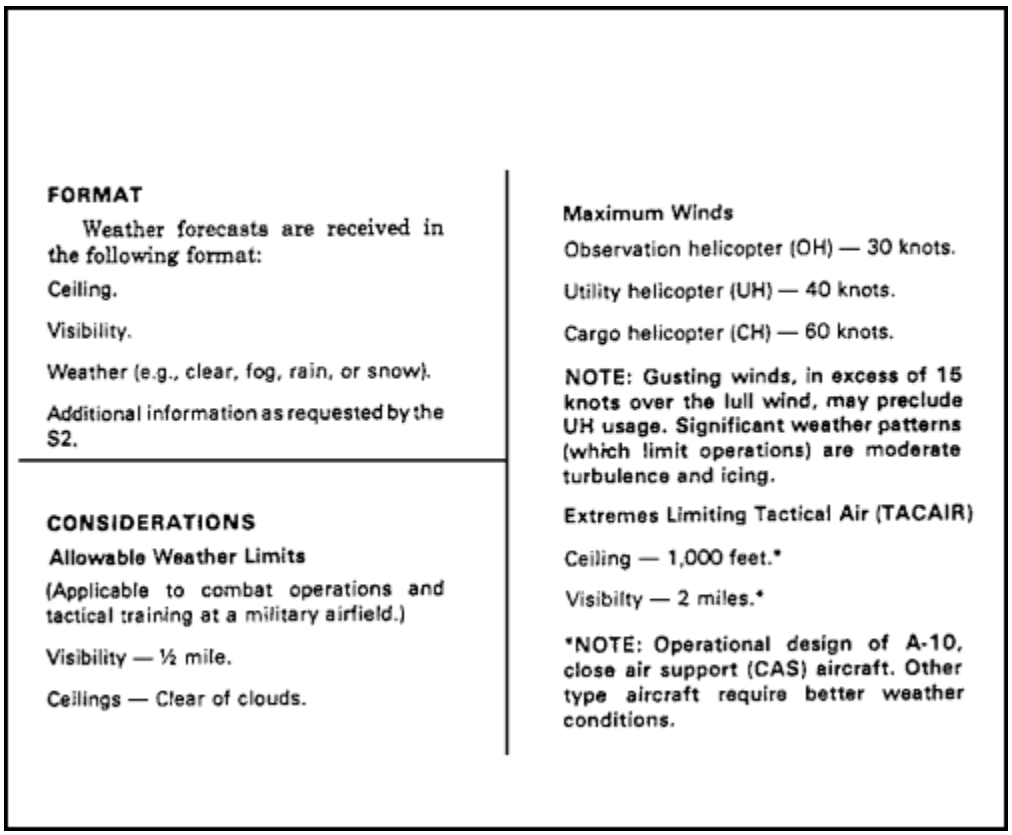

FIGURE 2. WEATHER DATA.

Troops Available

The AATF should have enough combat power to seize initial objectives and protect the LZs until follow-on echelons arrive in the objective area.

Assault (lift) helicopter capability is the single most important variable in determining how much combat power can be introduced into the objective area.

Aircrew endurance must be considered. For planning purposes, the AATFC should consider eight hours of day and four hours of night flying to be a safe limit for aircrews. If those limits are exceeded during a single period, degraded aircrew performance can be expected on the following days.

Mission, enemy, terrain, and troops are valuable. However, perhaps the most valuable commodity to an AATF planner, and the one he never has enough of, is time.

Time

The time available for preparation, planning, and rehearsals is crucial to any air assault operation. Air assault planning must be centralized and precise, and normally takes more time than that for other operations.

Normally, additional planning time must be allotted for night operations and those involving multiple PZs and/or multiple LZs.

The AATFC must allow adequate time to ensure that all subordinates, particularly aircrews, and thoroughly briefed. Briefing time is significantly reduced by viable SOPs and previous training.

The AMC must be provided time to brief and totally integrate all aviation units.

Effective planning means nothing if the air assault operation is compromised. Security and control are vital.

SECURITY AND CONTROL

Operational Security (OPSEC) is the protection of military operations and activities from enemy exploitation. It includes those actions taken to deny the enemy information about planning, ongoing, and completed operations.

Effective OPSEC helps maintain surprise in air assault operations. It is a tactical imperative because of the density of helicopters involved, the reliance on radio communications, and the potential for catastrophic losses if plans and operations are compromised. An air assault task force makes a lucrative target for enemy air defense, air, and artillery systems.

Every reasonable effort must be made to avoid disclosing intended location(s) and time(s) of air assault operations and thus losing the element of surprise. A "telegraphed punch" can be catastrophic to air assault operations.

To keep from tipping off the enemy, you must take steps to counter enemy intelligence-gathering methods.

Countermeasures

The AATF is vulnerable to enemy intelligence-gathering methods and must counter the threat with OPSEC measures. Standard OPSEC practices include -

Signal security. Signal security includes -

- Radio listening silence when possible.
- Use of low-power transmission.
- Use of directional antennas.
- Proper use of brevity codes and radio procedures.
- Secure communications equipment.

Information security. Plans and orders must be safeguarded. Information must be limited to those with a need to know.

Deception operations. It is often appropriate and necessary for the AATFC to employ deception operations to ensure the success of his mission. They may include -

- Firing false artillery preparations.
- Making false insertions.
- Maneuvering forces to other areas away from the objective.
- All other infantry deception techniques.

Passive security. This includes camouflage, countersurveillance, noise and light discipline, warning devices, and rapid troop insertions, plus -

- Tactical dispersion of helicopters and units; PZs and LZs must not be congested.
- Keeping helicopters' FARPs well to the rear and displacing them frequently.
- Marking PZs and LZs to avoid compromise.
- Careful planning of flight routes and altitudes, using terrain masking to deny the enemy direct observation.
- Using multiple PZs, LZs, and routes.
- Using the speed and maneuverability of helicopters to gain surprise.

Active security. These measures include employment of patrols, observation post, and reconnaissance. In air assault operations, active security measures include -

- Employment of air reconnaissance units to provide early warning around LZS and objective areas.
- Suppression of enemy intelligence-gathering capability.
- Air Force reconnaissance capability.
- Employment of long-range surveillance units (LRSU) of the division's military intelligence battalion.

In addition to operational security measures, steps must be taken to coordinate the movement of all the aircraft used in an air assault operation. This coordination is called Army airspace command and control.

Army Airspace Command and Control

Army airspace command and control (AýC^2) is considered early in the planning stage to resolve conflicts and provide for the safe movement of friendly aircraft. Controlling conflict of airspace use should be executed by SOP, directives, and other passive measures, because radio communications and positive control of all aircraft may not be possible during actual operations.

All this leads to a discussion of actual combat operations.

COMBAT OPERATIONS

The air assault attack is the basic type of offensive operation conducted by an AATF. It is the integration of the combat, CS, and CSS elements in the movement into or out of an objective area. Generally, the term insertion applies when discussing the air assault into the objective area; the term extraction applies when discussing the air assault from the objective area. While these terms are fundamental to all air assault operations, they take on added importance in the attack.

Attack

The opportunity to attack may arise during the course of battle, or it may be created by skillful tactical leadership. Whatever the source, the attack is fast, violent, resolute, shrewd, and coordinated. There are two general types of attack: hasty and deliberate. The major difference between the two is time and enemy information available. The type of action conducted by the larger force usually indicates the type of action employed by the AATF.

First an explanation of a hasty attack.

Hasty attack. Situations in which an AATF might be called on to execute a hasty attack in support of a larger force are -

- During movement to contact by the larger force when unexpected contact is made. The AATF is committed to exploit a tactical advantage or to further develop the tactical situation.
- When part of the larger force's deliberate attack plan is modified while the operation is underway. The AATF is committed to reinforce in a weakened area or to exploit a tactical advantage.
- At the conclusion of an attack when a further advance is ordered. The AATF is committed to exploit the attack's success and to maintain momentum.
- An attack from a defense in which the commander sees an opportunity for offensive action and seizes the initiative.

When a hasty attack is considered under any of these circumstances, tentative PZs, LZs, and flight routes throughout the higher unit's zone of action are identified. This permits rapid commitment of the AATF anywhere in the sector. Because the hasty attack is conducted on short notice, there is little time to plan and orders are brief. The AATFC must rely on previous training and SOPs to cover these situations.

When the AATF is committed, the AATFC initiates several actions at once. He directs suppressive fires to neutralize the enemy's ability to counter the air assault operation, and he concentrates sufficient combat power to overwhelm the enemy at selected points. While the AATF is en route, support fires suppress or destroy known or suspected enemy positions with priority of fires to SEAD.

As the attack starts, attack helicopter units overwatch and react as necessary while the AATFC and FSO direct FA, mortar, CAS, and other supporting fires. FA and mortars destroy, neutralize, or suppress enemy indirect fire weapons as soon as they are located. Smoke may be used to screen aircraft movement from observation. However, the AATFC must be careful that smoke does not obscure the LZ and hinder the landing operation. Airspace coordination must be effected early.

When you have more time and intelligence available, you can plan and conduct a deliberate attack.

Deliberate attack. The AATF, as part of a larger force operation, may conduct a deliberate attack. The AATF is provided sufficient time to develop a detailed, coordinated plan, receive additional assets, change task organization as necessary, and gather detailed intelligence.

Detailed information about the terrain is collected so that the best PZs, LZs, and flight routes can be selected. Air assault objectives are normally in the enemy's rear area, or attack from the flank or rear. This usually precludes or limits the opportunity for leaders to see the terrain and forces planners to rely on maps and aerial photographs.

When the larger force concentrates its combat power on a narrow front to break through enemy defenses, the AATF may bypass main defenses to destroy artillery positions, command posts, and logistics and communications facilities, and/or to secure key terrain in the enemy's rear.

An attack against a heavier or well-prepared enemy force, particularly on the mechanized and/or armor battlefield, may subject the AATF to devastating firepower. For this reason, the AATFC may land the AATF away from the objective and conduct a dismounted attack in conjunction with friendly mechanized and/or armor forces.

The AATFC must also consider that a highly mobile enemy force could encircle the AATF before it moves from an LZ. Consequently, he selects LZs in armor-restrictive terrain and employs antitank weapons and attack helicopter units against likely armor approaches. When used with accurate intelligence, these actions provide time to organize after landing and to attack the objectives.

If the attack succeeds in making an opening, a combat operation called exploitation tries to improve upon the opening.

Exploitation

Exploitation is an operation undertaken to follow up success in the attack. Attacks are conducted with two overriding requirements: speed and violence. The attackers bypass pockets of resistance to concentrate on the destruction of the more vulnerable headquarters, combat support, and combat service support units. They disrupt the enemy's command and control; his flow of fuel, ammunition, and repair parts; and his air defenses and artillery. This weakens and/or destroys the enemy. Enemy air defenses are avoided or suppressed for the AATF to exploit the situation.

If the enemy retreats, the AATF can attempt a pursuit.

Pursuit

Pursuit is an offensive action against a retreating enemy. It seeks to envelop the retreating force and destroy it by coordinated fire and maneuver. An AATF, operating as part of the pursuit force, can expect to be ordered to bypass resistance of any kind and move relentlessly to deep objectives that serve as checkpoints for the retreating enemy. The helicopter provides the AATF with the high degree of mobility required to conduct pursuit operations.

Air Force tactical aircraft, attack helicopters, and air assault forces can repeatedly attack the flanks of the withdrawing enemy columns, slowing them and aiding in their destruction. Blocking positions can be established on withdrawal routes to trap enemy forces between the encircling force and the direct-pressure force. Field artillery and FARPs should be lifted into the encircling force area as soon as possible.

In addition to the various direct offensive missions, the AATF may be used to secure and defend selected objectives.

Secure and Defend

This type of air assault operation is two-phased and requires detailed planning like a deliberate attack. The secure-and-defend mission is conducted when an objective, such as a vital terrain feature, must be seized and retained. The limited staying power of the AATF dictates early linkup with ground units, reinforcement by other units, or extraction from the enemy area.

The first phase is an attack to secure terrain to be controlled by the AATF in the initial stages of the assault. This should be a single-lift insertion of sufficient combat power to defeat enemy forces on the objective.

The second phase of the operation is the defense of the objective. The AATF normally establishes an airhead. This is a perimeter defense that controls all terrain essential to the defense of the objective. The airhead is large enough to provide operating space for combat, CS, and CSS units. It should include adequate LZs for simultaneous combat assaults using all airlift assets and provide space for landing artillery, follow-on forces, and supplies.

The airhead is small enough for a battalion to defend, yet large enough to permit defense-in-depth and maneuver of reserves to counter enemy attacks. As a rule, the area an infantry battalion can defend is 3 to 5 kilometers in diameter. Size is dictated by mission, enemy strength and disposition, terrain, and AATF combat power.

Boundaries delineate responsibilities of the AATF subordinate elements. The airhead is often divided into company-sized objectives for the air assault. Each company clears, secures, and defends an assigned area of the airhead (which seldom has a rear area). The size sector assigned each company should be within its capability to seize and defend, based on an analysis of METT-T.

Boundaries minimize adjustments during the transition from assault to defense. They should also prevent one unit from defending in widely divergent directions. A company facing a dangerous avenue of approach, for example, is assigned a smaller sector than a company facing a less dangerous avenue.

Defensive responsibility for an avenue of approach is not divided. The unit assigned the approach also covers any dominating terrain.

A terrain feature to be secured in the assault, and vital to AATF mission accomplishment, is designated an assault objective. The assault objective should include terrain that dominates all high-speed approaches into the airhead area. Assault objectives are assigned priorities. Those specified by higher headquarters are given first priority. Others are ranked according to the threat they would pose if controlled by the enemy. A company's sector should include at least one LZ for the assault and to aid in resupply and evacuation.

AATFs can also be used for reconnaissance in force.

Reconnaissance in Force

A reconnaissance in force is conducted to determine or test the enemy's disposition and strength or to develop intelligence. It is conducted when the enemy situation is vague. This type of operation is conducted by forces strong enough to accept engagements with the enemy in order to accomplish their mission.

The information obtained (for example, major weaknesses in enemy positions), if promptly exploited, may provide a significant tactical advantage. The reconnaissance in force is planned and conducted with elements specifically prepared to find the enemy and develop the situation. Once the units are committed, they are on a "be prepared to fight" status.

The reconnaissance in force is an ideal mission for the AATF in an insurgent environment in order to keep constant pressure on a guerrilla force. The AATF is suited for reconnaissance-in-force operations against conventional light infantry forces. However, it is not suited for such operations in a strong armor threat area due to the likelihood of ground contact with an enemy force that has superior firepower, mobility, and protection.

The reconnaissance in force accepts risk to gain intelligence information rapidly and in more detail than other reconnaissance methods. The commander assigning an AATF this mission must determine the following:

- Is the desired information important enough to justify the risks to personnel and equipment?
- Can other intelligence methods obtain the same information in sufficient time with less risk?
- Will the reconnaissance in force compromise future plans?
- Can the operations succeed?

The reconnaissance in force, however, differs from the normal attack that is conducted to destroy enemy forces or to secure terrain. The reconnaissance in force locates the enemy and presses him into reacting. When the force discovers a weak point, the AATF exploits it quickly. The AATFC exercises caution, however, since the enemy response may be too strong for the AATF. Thus, the commander also plans withdrawal to avoid destruction of the AATF.

When the commander wants information about a particular area, the reconnaissance in force is planned and executed as an attack against a specific objective. The objective is of such importance that, when threatened, the enemy will react.

For example, a successful reconnaissance in force may cause commitment of enemy reserves, redeployment of enemy fire support means, or adjustment of enemy second-echelon forces. Taking a terrain objective is not in itself the purpose of the operation. Rather, the operation seeks to obtain specific information about the enemy by seizing a terrain objective.

The objective location depends on the information desired. The AATF's combat power must be sufficient to force enemy reaction. This should disclose positions, strength, planned fires, and planned use of reserves. It may also disrupt the enemy's planned operations and take the initiative from him.

An AATFC can deploy all three companies against specific objectives, or the commander may commit one or two companies and retain the third to respond to tactical situations as they develop. When the enemy reacts to one unit, the units not in contact are shifted to exploit revealed enemy weaknesses or help extract a unit under pressure.

Because of its mobility, an AATF makes an excellent force to conduct a raid.

Raid

This is a swift penetration of hostile territory that may be conducted to destroy installations, confuse the enemy, or gather information. It ends with a planned withdrawal.

Because a raid is conducted behind enemy lines, it requires exact planning to ensure a high probability of success. The selection of LZs, PZs, and flight routes (as in the deliberate attack) is based on the results of detailed planning and ample intelligence. Since the raiding force attempts to achieve surprise, the decision to land on the objective takes on added significance.

The AATF may land on or near the objective when the following conditions apply:

- There is a suitable LZ.
- The enemy does not have a highly mobile reaction force nearby to attack the AATF immediately after it lands.
- The objective is not accessible over land.
- The AATFC determines that overland movement would expose his forces to enemy fire and possibly disrupt the mission.
- Surprise is important.
- When there are no armor or mechanized units and/or vehicles on the objective.
- When there are no air defense weapons on the objective.
- When the AATF can land overwhelming combat power quickly on the objective.

The AATF should land some distance from the objective when -

- The AATFC decides to assemble and reorganize before conducting the assault.
- The only suitable LZs are away from the objective.
- There is a highly mobile enemy force on the objective that could disrupt the landing.
- Surprise is not imperative.
- Local air defense is too strong.

The AATFC task-organizes his force to accomplish four essential tasks:

- Command and control.
- Security.
- Support.
- Assault.

Command and control. The AATFC commands and controls from a location that offers the best vantage points; however, during air movement, the AATFC normally uses a command and control helicopter. After units are on the ground, he may join one of the ground units or he may continue to control from the air.

Security. The element given the security mission blocks avenues of approach into the objective and provides suppressive fires for withdrawal after the mission is complete.

Support. The element providing assault support lays down a heavy volume of suppressive fires to neutralize the objective and destroy the enemy that is occupying it.

Assault. The element conducting the assault secures the objective and provides security for specialty teams (for example, demolitions).

Rehearsal. Rehearsals are critical to success. The operation should be rehearsed several times by all elements participating in the raid. If it is a night raid, rehearsals are conducted during daylight and darkness.

Withdrawal. A raid differs from other attacks in that it includes a withdrawal plan. The plan contains provisions for withdrawal by air as well as on foot (in case aircraft cannot extract the force). Withdrawal on foot may require the entire force to move as a unit, or the force may have to break down into small elements to evade enemy contact and leave the area.

A withdrawal by air involves movement into, and defense of, the PZ. If the force is withdrawing to commit to another combat mission, an additional ground tactical plan is prepared for that phase of the operation. Either plan is as detailed as time permits and includes -

- Pickup zone designation.
- Fire support plan for movement to secure the PZ and to cover the withdrawal.
- Schedule of unit movement to the PZ.

- Loading priorities.
- Designation of, and instructions for, the PZ control group.
- Landing zone designation following withdrawal.

Unit sequence. The sequence of unit withdrawal varies according to the tactical situation and the subsequent mission of the AATF. Administrative and combat service support personnel and heavy equipment are withdrawn first (before tactical units). The commander may withdraw them to a secured (intermediate) area and then move them to another (combat) area after it is secured. Unit redeployment is determined by combat and security requirements in the new area.

Pickup zone designation. PZs are designated by the headquarters controlling the withdrawal. They are as close to unit positions as the terrain and enemy situation permit. To achieve speed in landing, loading, and lift-off, multiple PZs may be used consistent with available security forces.

A PZCO is designated for each unit's PZ. He is responsible for calling units and guiding them from their assembly areas to the PZs to expedite loading. The senior PZCO coordinates all PZ operations when using multiple PZs (and PZCOs). He maintains contact with the AMC to ensure coordinated arrival of troops and aircraft.

Security. Security elements are positioned to cover the main body as it assembles, moves to the PZ, and withdraws. Preferably, security may be composed of one subordinate unit. Unit integrity aids control and gives more effective reaction in case of attack. Alternatively, security can be composed of small detachments from each subordinate unit. Security elements protect the PZ at a time ordered by the commander conducting the withdrawal.

Each aircraft withdrawing the security force lands as close as possible to its individual load. During this short interval, attack helicopter teams overwatching the withdrawal provide security. Panels or other covert markers identify each loading site. When the withdrawal is conducted during limited visibility, chemical lights or directional beacons are used.

The last security element to withdraw achieves some protection by detonating Claymore mines and firing automatic weapons just before loading. The loading and lift-off are executed quickly. Attack helicopter teams overwatch the lift-off.

Reserve. A reserve, when designated, may remain airborne near the PZ or on standby in another area. This gives the commander a reaction force that can be employed as required to support withdrawal of the security forces.

During withdrawal, fire support is planned and executed to protect security elements as combat power on the PZ diminishes.

The AATF, as part of a combined arms team, needs solid combat support to have any hope of success in its mission.

COMBAT SUPPORT-COMBINED ARMS TEAM

The air assault task force commander uses combat support elements to enhance the combat power of his maneuver elements. Knowing combat support capabilities, assigning them appropriate missions, and controlling their operations are essential to the application of superior combat power at the decisive time and place.

The AATFC's key role in integrating combat support elements with his maneuver elements to form the combined arms team is critical for success in the AirLand Battle.

The following paragraphs explain how to use combat support in an AATF.

Employment of Combat Support

Combat support elements. These are normally under OPCON or in DS of the AATF in order to ensure the close coordination and continuous, dedicated support required in air assault operations.

Determining task organization. The AATFC assigns an element that is attached, under OPCON, or in DS to one of his subordinate maneuver units when he feels the element could be more effectively controlled or employed by one particular unit rather than under AATF control.

General support is used when the combat support element can best support the operation under centralized control to quickly shift its efforts to the point needed (for example, mortars that are normally used in a general support role) and when the situation is vague or changing.

Basic responsibility to support. No matter what support status the combat support elements are assigned, the AATFC has the responsibility to ensure the combat support units are properly supported by the AATF. Although the AATFC is not required to provide support under the status of DS, GS, or OPCON, it is to his advantage to ensure the CS elements are properly supported.

This means providing rations, fuel, and ammunition as required. It also means expediting repair of equipment outside the capabilities of the AATF maintenance unit. The advantage of doing this is to ensure the CS elements are able to continue providing support.

Relationship to the AATF staff. The commander of the combat support unit must be both a commander and a special staff officer. This means he commands his unit and provides advice and assistance to the AATFC. He serves as a special staff officer during the planning phase of an operation, providing assistance and advice in the preparation of the OPORD. He can also provide advice and assistance during the conduct of the operation, but this is limited since his primary concern is command of his unit.

Fire support is as important to the success of an AATF mission as combat support.

FIRE SUPPORT

Fire support is the collective and coordinated employment of mortars, field artillery, attack helicopters, close air support, naval gunfire, and other fires in support of battle plans. The mission of the fire

support system is to destroy, neutralize, or suppress surface targets in support of air assault operations. It includes suppression of enemy air defenses, which is imperative for air assault operations.

Here are the basics of AATF fire support:

General

The AATFC integrates the firepower of mortars, FA, CAS, EW, and, when available, naval gunfire, with the maneuver of combat units to defeat the enemy. Fire support enhances the AATF's combat power by -

- Destroying, suppressing, and neutralizing targets.
- Obscuring the vision of enemy forces.
- Isolating enemy formations and positions.
- Slowing and canalizing enemy movements.
- Killing or disabling the enemy at ranges greater than that of direct fire weapons.
- Screening with smoke or creating obstacle areas with scatterable mines.
- Reducing the effects of enemy artillery by active counterfire.
- Providing illumination.

To use fire support assets effectively, the AATFC must have an understanding of the FA support relationship. The artillery force commander is the fire support coordinator for the AATF; the fire support officer is the assistant FSCOORD.

Each AATF is provided a fire support element, led by an FSO, from the direct support battalion. In those instances when the AATF is operating independently, it may be necessary to attach an artillery unit (battery or battalion) to provide adequate fire support. Attachment is a nonstandard mission and involves special considerations for the AATF, such as the responsibility to provide security, logistical support, and lift capability to the artillery unit.

The fire support coordinator is the individual responsible for the specifics of AATF fire support.

The Fire Support Coordinator

While the AATFC is responsible for the integration of all fires with the maneuver plan, the FSCOORD is his principal assistant for the proper integration and application of fire support. Working together as a team, the supported commander and the FSCOORD generate the maximum combat power available to support the ground forces.

To plan fire support effectively, you must know the capabilities of fire support delivery systems.

Fire Support Delivery Systems

The AATF is unique in its mission and organization; so are its support elements. They are specifically tailored to be integrated into the AATF. The indirect fire assets must be light and maneuverable and capable of maintaining the fast pace of the AATF. The fire support delivery means available to the AATF may include-

Mortars. Organic to each infantry battalion, they are used to provide close-in direct fire support.

Artillery. Supporting artillery must either be positioned well forward to provide fires from the PZ to the objective area or airlifted with the AATF to the objective area.

Air defense artillery. Supporting ADA can be called upon to provide direct fire support when the situation demands and the commander so directs.

Close air support. In most cases, US Air Force (USAF) aircraft will be available to provide close air support. Requests for these aircraft are processed through the TAC CP collocated with the AATF.

Naval gunfire. Navy cruisers and destroyers provide fire support in coastal areas. Naval gunfire spotters from a US Marine Corps (USMC) air and naval gunfire liaison company (ANGLICO) may be attached to the AATF to control these fires.

Attack helicopters. Because of their mobility and firepower, attack helicopters may be integrated into the fire support plan when conventional FA is not available.

Using all these assets effectively requires detailed planning and coordination.

FIRE SUPPORT PLANNING AND COORDINATION

Fire support planning addresses how fire support is to be used to support maneuver forces. Fire support coordination entails those actions needed to implement plans and manage resources on the battlefield.

Although planning and coordination are separated, they overlap and are mutually supporting. If the planning has been done well, the implementation (coordination) will give the commander the support he needs to win.

The planning and coordination process begins when the mission is received or assumed. The AATFC, S3, and FSO interact throughout the planning sequence, the decision process, and the execution of the mission.

To plan fire support properly, you must know the facilities available to you.

Facilities

At the AATF level, the FSO advises the AATFC on how fire support can best influence the operation. He performs the planning and coordination of fire support assets to include mortars, field artillery, close air support, and naval gunfire. The fire support element (FSE) and fire support team (FIST) provide personnel for continuous planning and coordination of support fires.

AATF fire support element. The FSE at each AATF (battalionsize) consists of an FSO, assistant FSO, fire support sergeant, and fire support specialists. The FSE, AATF S3 Air, and advisors from the other fire support means are collocated within the AATF TOC for the planning and coordination of fire support.

The FSE coordinates and works closely with the brigade FSE and FSEs of other battalions, the DS FA fire direction center (FDC), S2 and S3, the tactical control air party, aviation liaison officer, S3 Air, mortar platoon leader, engineer platoon leader, and company FISTs. The FSO supervises the operation of the FISTs.

Company fire support team. The company FIST and the forward observer (FO) section provide the fire support planning and coordination for maneuver companies and platoons. The FISTs are provided by the DS FA battalion. Occasionally, firepower control teams for naval gunfire (NGF) and naval air, and forward air controllers for USAF CAS collocate at the company FIST to advise and assist in the use of their assets. The FIST is supervised by an FA lieutenant who serves as the company commander's FSO.

All this leads to the particulars of fire support planning.

Fire Support Planning

The planning process determines how fire support will be used: what types of targets will be attacked, when, and with what means. It is sufficiently flexible to accommodate the unexpected in combat. Integrated fire support can result only when the FSCOORD is an aggressive contributor to the AATFC's planning sequence and decision-making process.

The depth and detail of fire support planning depend on how much time is available. Many of the actions that occur in response to battle situations are established in SOPs and in fragmentary orders (FRAGOs).

Fire support planning is continuous and concurrent at all levels. During the battle, planning is concurrent with fire support coordination to implement the fire support plan on the battlefield.

The fire support plan outlines the way artillery, mortars, CAS, and NGF are used to complement the scheme of maneuver, and provides instructions for executing those fires. It also details the use of AATF target acquisition assets. It prioritizes targets, matches them with the available fire support systems, and allows fires to be executed quickly (without specific direction from the commander) once the operation starts. An AATF fire support plan should include -

- A detailed concept of how fires support the air assault operation from the initial PZ to the final objective.
- A target list that includes locations where fires are expected or likely to be used.
- A priority of fires telling which element receives fire in case of conflict (for example, priority of FA fires to Team A, mortar fires to Team B).
- Target attack priorities establishing which type of mission to fire first in case of conflict (for example, first priority to enemy air defense systems, second priority to assist disengagements).

- An allocation of priority targets to indirect fire assets if designated.
- Firing schedules for the indirect fire weapon systems. This planning tool identifies who fires the mission, when it occurs, and the nature of fires (for example, FASCAM, smoke, SEAD preparations).
- Informal airspace coordination areas (ACA).
- Coordination measures for providing troop safety and promoting synchronization of supporting fires.

During the planning of fire support for an air assault operation, the FSO must consider displacement. When FA can support the AATF from a secure area (without displacement forward of the forward edge of the battle area [FEBA]), it does so. If such support is not feasible, the FSO determines if other fire support is sufficient to accomplish the mission.

If other support is not sufficient, it may be necessary to displace the FA into the objective area. When the decision to displace is made, consider that -

- Displacement is accomplished by echelon to prevent temporary loss of FA support.
- FA requires security in the objective area.
- Cargo helicopters are required to displace the FA unit.
- Ammunition resupply is made by air.
- The FA depends on helicopter assets for mobility unless prime movers are lifted into the objective area.
- Supporting towed artillery (M198 or lighter) must be available.

The fire support plan is developed by the FSO with assistance and input from the Air Force LO, FISTs, heavy mortar platoon leader, S2, and S3. A fire plan is constantly refined or modified as the operation continues. Thus, the fire support plan facilitates responsive fires to the AATF wherever they are needed.

A formal and/or informal planning approach at the AATF level is a combined process that uses the principles of both formal (downward) and informal (upward) planning. Initially, the AATF FSO disseminates, in the OPORD, a fire support plan to support the AATF. This product usually contains all the elements listed above. The FSO plan is modified as company and/or FIST fire plans are received. The rewritten fire plan is disseminated to each weapon system for execution.

To facilitate fire planning, company FSOs normally accompany team commanders to the AATF OPORD briefing. This permits the company FSOs to hear the operational concept together with their commander. Within minutes after the OPORD, they can get together to develop their fire support plans. This arrangement also allows the AATF FSO to brief the company FSOs on plans the AATFC wants implemented. Written fire plans can be disseminated. Questions can be answered quickly and conflicts can be resolved with minimum confusion.

Suppression of enemy air defense is a critical task in fire support to ensure success of the air assault operation. The fire support plan must include SEAD. Lift helicopters are especially vulnerable to

enemy air defenses. Unless there are overriding tactical considerations, enemy air defense is always suppressed.

The AATF FSO ensures that all flight routes and suspected enemy ADA sites are targeted with preplanned fires. Suppression of enemy air defense may be executed either as scheduled fires based upon a specific time schedule, or may be fired "on call" based upon the movement of the AATF through predetermined zones or across predetermined phase lines.

The FSO is normally located with the AATFC and requires a dedicated fire direction net; he will control the lifting and/or shifting of SEAD fires as directed by the AATFC. Attack helicopter elements providing air assault security will suppress enemy ADA encountered en route. The attack battle team captain should select overwatch positions or fly escort along the flight route to provide immediate suppressive fires.

The fire support plan may include any of the following categories of fire designed to complement the AATFC's operation:

- Planned fires on known or suspected enemy locations, avenues of approach, supply routes, and suspected weapons locations.
- On-call fires (prearranged fires that are requested).
- Preparations.
- Counterpreparations.
- Counterfires.
- Artillery-delivered smoke (obscuration or screening).
- Illumination.
- Suppression fire.
- Scatterable mines (FASCAM can be delivered only when 155-mm howitzer systems are available to the AATF).

The FSO exercises great and broad responsibility in coordinating fire support.

Coordination

Effective fire support depends on decentralized execution and coordination. Based upon the AATFC's intent for using fire support, the FSO and FISTs execute the plan during the operation with minimum specific instruction. The FSO's coordination includes all actions required to make the plan work. Specifically, he -

- Ensures the DS battalion FDC, mortar platoon FDC, and any other supporting elements have the correct fire support plan and understand their portion of it.
- Verifies that the AATF mortars are in position to support, if available and required.

- Keeps fire support representatives at higher headquarters and the supporting FA TOC informed of the current tactical situation.
- Selects fire support means to attack targets during the operation.
- Keeps the AATF commander and S3 informed of the current status of fire support means available to the AATF.
- Recommends modifications of the fire support plan (during the operation) to react to battlefield changes, and ensures FISTs are aware of changes.
- Recommends, to the AATFC and/or S3, fire support coordinating measures to facilitate attack of targets or provide troop safety.
- Coordinates requests for additional fire support with higher level fire elements.
- Monitors execution of the fire support plan.

The FSO ensures that the plan developed remains supportable. He must immediately inform the AATFC if there is not enough fire support to make the plan work or if changes are dictated in the plan. To do this, he is forward with the command group during the conduct of the operation. He normally flies with the AATFC when a C^2 helicopter is used.

The FSO keeps abreast of the tactical situation and coordinates all fire support impacting in his zone, including that requested by the AATF. He ensures that fires do not jeopardize troop safety, interfere with other fire support means, or disrupt adjacent unit operations. In this coordination, the FSO can use fire support coordinating measures.

During the operation, shifts in priorities of fire, changes to the fire plan to support a changed scheme of maneuver, and immediate CAS are all handled forward by the FSO and ALO with the command group. The FSE at the TOC continues its planning responsibilities and provides backup support to the command group.

The FSO, in conjunction with the S3 Air, coordinates the fire control activities of the AATF.

All aviators are trained to call for and adjust indirect fires. Air reconnaissance or attack helicopter unit aeroscouts may be particularly valuable in assisting the AATFC and the FSO in coordinating or adjusting indirect fires because they are normally in the best position to see the battlefield.

Just as there are specific concerns for infantry and aviation assets in an air assault operation, artillery assets take special planning as well.

ARTILLERY AIR ASSAULT OPERATIONS

To plan artillery fire for an air assault operation, you must keep in mind both the basics--how to directly support the current operation--and the capabilities of the artillery assets on hand.

General

The AATF fights both offensive and defensive battles. Its organizational tactics, emphasizing aerial mobility and flexibility, require special planning considerations for use. As discussed above, the FSCOORD plans (with the AATFC) to support the ground tactical plan. In this planning, the FSCOORD considers -

Range for artillery and other fire support systems. With the extended distances anticipated, the challenge for the FSCOORD is to position fire support systems so they can range (place fire) and mass (concentrate fire) on targets within the AATF area of operations. When the AATF must operate out of artillery range, there is a greater dependence on CAS, attack helicopters, and mortars.

Importance of the target. Artillery is positioned to range those targets considered critical to the maneuver commander. For high-value targets, the commander and the FSCOORD may consider moving artillery by helicopter to strike deep in the enemy's rear by firing across-FLOT raids or displacing laterally in sector.

Airlift assets. The mobility of the 105-mm direct support artillery battalion is one of its major characteristics. In taking advantage of its mobility to weight the operation, the commander must consider the cost of aircraft assets. To reposition the firepower of the DS battalion by air will normally require one aircraft (UH-60 or CH-47) per howitzer. The CH-47D can slingload two or more M102s simultaneously. More aircraft must be committed to movement of vehicles and supplies necessary to support the mission.

Risk in crossing lines. A major consideration in planning air assault artillery operations is the risk in crossing enemy lines. The value of the target is weighed against the chances of survivability. Once the risk of crossing lines is considered, the FSCOORD must evaluate the survivability of the unit on the ground and during extraction.

Target location. For air assault operations, accurate LZ and target locations are essential. Accuracy of locations determines accuracy of fires; targets will often be engaged with unobserved fires.

Pickup zone and/or landing zone. Artillery displacements require PZs and LZs large enough to position equipment. When the unit arrives at the LZ, it must be secured and capable of supporting the unit that will most likely use the LZ as a firing point.

Ammunition. The amount of ammunition to be made available has a major impact on artillery support. When planning indirect fire support, the FSCOORD must consider the amount of ammunition required and the availability of transportation assets. Artillery ammunition supply operations will place a significant burden on aviation assets available to the AATF.

Communications. In employing field artillery, the ability to maintain communications is required. The supporting unit must be within radio range of the supported unit to receive the call for fire. (This is particularly important when positioning the M198, with its maximum range of 30 kilometers.) Unless unavoidable, the firing batteries must be within communications range of their parent battalion.

Security. The AATF artillery must rely on either terrain positioning or attachment of infantry to provide for security. The need for security forces is essential when FA units accompany the AATF across-FLOT.

The most effective use of artillery comes when you keep the capabilities of the artillery pieces and artillery units in mind.

Capabilities

The artillery supporting the AATF should be organized with capabilities to match the needs peculiar to air assault operations.

The type of howitzer likely to participate in air assault operations is the towed 105-mm howitzer. Characteristics of the weapon, and of 105-mm-equipped units, are listed below:

Responsive. Capable of high rates of fire.

Lightweight. Capable of external slingload by UH-60 and CH-47 helicopters.

Easily sustainable. Towed artillery is less prone to downtime because it is not tied to a self-propelled carriage. It has reduced logistics requirements for a prescribed load list (PLL) and petroleum, oils, and lubricants (POL) than self-propelled artillery.

Lack of crew protection. The crews of towed howitzer batteries are especially vulnerable to direct and indirect fire. With no armor protection, the battery can expect heavy losses if engaged by the enemy.

Position security. The mission of the field artillery is to provide indirect fires. FA is not designed with the capability to defend itself against a significant threat that may be encountered in across-FLOT air assault operations.

Limited range. The 105-mm howitzer has a maximum range of 11,500 meters (15,100 with rocket-assisted projectiles [RAP]). The AATF can rapidly outdistance its supporting artillery.

Caliber. The 105-mm howitzer is the smallest caliber howitzer in the Army inventory. It has a shell burst radius of 35 meters.

Ammunition. The 105-mm howitzer is limited to conventional munitions (high explosive [HE], illumination [ILLUM], improved conventional munitions [ICM], white phosphorus [WP], and smoke [HC]) with limited chemical capability. The FASCAM is not available except to 155-mm-howitzer equipped units.

The M198 howitzer may also be available for support of air assault operations. It is a 155-mm towed howitzer with a maximum range of 18,100 meters (30,000 with RAP). The M198 is movable by CH-47C and CH-47D aircraft. The 155-mm has a greater versatility in ammunition (HE, ILLUM, ICM, WP, HC, remote antiarmor mines system [RAAMS], area denial artillery munitions [ADAM], dual-purpose improved conventional munitions [DPICM], chemical, and nuclear [NUC] with a burst radius of 50 meters.

If the AATF is operating along a coastline, field artillery support by be impractical or even impossible. Fire support may have to come from offshore, from the big guns of the US Navy.

NAVAL GUNFIRE SUPPORT

When operating near a coastline, the AATF may have available to it naval gunfire support. Naval guns can provide highvolume, long-range, accurate fires employing a variety of ammunition.

The air and naval gunfire liaison company (ANGLICO) provides ship-to-shore communications and fire control teams to adjust fire. In the absence OF ANGLICO fire control teams, the AATF FISTs, aerial FA FOs, or attack helicopter unit aeroscouts may call for and adjust fires through the AATF ANGLICO team.

Often, an AATF will require tactical air support from the US Air Force in addition to fire support from the US Navy.

UNITED STATES AIR FORCE TACTICAL AIR SUPPORT

USAF support for the AATF normally includes tactical air reconnaissance, CAS, and tactical airlift. The AATF staff, in coordination with the air liaison officer, plans, integrates, and coordinates the Air Force support for air assault operations.

The joint air attack team (JAAT) is a combination of US Army attack helicopters and USAF CAS aircraft (normally A-10 tactical jet aircraft) operating together to locate and attack lucrative high-priority targets. The JAAT normally operates in concert with FA or mortars, ADA, and ground maneuver forces. Information flowing between the AATFC, attack helicopter team leader, and forward air controller (FAC) optimizes the effectiveness of attack helicopter teams and attack fighter flights in destroying the enemy forces.

The JAAT can provide the AATFC with a highly mobile, extremely lethal tank-killing force capable of engaging enemy forces beyond the range of other antitank weapons.

The JAAT can destroy or disrupt enemy formations and provide vital intelligence about enemy strengths and locations. By simultaneously employing attack helicopters and A-10s against the same target array at the same time, the AATFC increases the lethality and survivability of both systems.

When a JAAT is approved and is in direct support of an AATF, it is controlled by the AATFC. Otherwise, it is controlled by the attack helicopter commander or team leader, who reports to brigade headquarters.

An AATF is extremely vulnerable to enemy attack and disruption, especially due to its dependence upon aircraft.

You can expect enemy aircraft to do their best to foil the air assault operation. You must plan your own air defense while you plan the air attack.

AIR DEFENSE

In the mid- to high-intensity environments, air assault operations normally require either local air parity or local air superiority. Since the number and type of air defense systems that can accompany the AATF is limited, and because helicopters are vulnerable to attacking aircraft, a great reliance must be placed on friendly air forces for air defense protection. Additionally, the AATF must optimize the employment of organic air defense weapons and maximize the use of passive defense measures.

There are certain standard tactical missions assigned to air defense units.

Air Defense Standard Tactical Missions

ADA unit missions are assigned using ADA standard tactical missions. These missions are much like those assigned the field artillery (to include support responsibilities for an ADA unit). They also establish support relationships to the supported unit or to another ADA unit.

The missions are general support, general supportreinforcing, and direct support. However, an AATF normally receives an ADA element in DS for close and continuous support. The ADA unit leader positions his weapons as necessary to properly support the AATF. The ADA may be attached, for movement, to infantry to facilitate control and security.

A number of weapon systems are available to air defense units.

Air Defense Systems

Air defense protection for the AATF (within friendly lines) is provided by TAC AIR and all elements of the ADA systems (Hawk, Patriot, Chaparral, Vulcan, Redeye, and Stinger). When the AATF penetrates enemy-held territory, air defense comes from the ADA assets that can be displaced by helicopter. Due to weight restrictions, air defense forward of the FEBA is limited to organic Redeyes, Stingers, and Vulcans (towed).

Although the towed Vulcan can be moved by UH-60, the prime mover must be displaced by CH-47. The Vulcan battalion has FM radios. Due to the extended distances between the Vulcan battery command post and the platoon elements (when attached to the AATF), the battery may require long-range AATF communications facilities.

Like field artillery and aircraft, effective use of air defense artillery requires a secure, preplanned method of control and communications.

Control and Communications

Air defense fire is controlled using the rules of engagement (determining type of aircraft and whether it is friend or foe) and weapons control status established by higher headquarters. Team leaders are responsible for deciding whether an aircraft is hostile or friendly. Weapons control status describes the relative degree with which the fires of air defense (AD) systems are managed. They are:

Weapons free. They may fire at aircraft not positively identified as friendly.

Weapons tight. They fire only at aircraft positively identified as hostile according to announced hostile criteria.

Weapons hold. They do not fire except in self-defense or in response to formal orders.

The best use of ADA assets means you must set priorities on ADA targets.

Air Defense Priorities

Priorities for AD within the AATF are established by the AATFC. The senior air defense officer provides advice and makes recommendations based on his analysis of his area of operations including the terrain, high-performance aircraft, attack helicopter avenues of approach, and all the assets within his area of operation. The AATFC determines his priorities based upon -

- The AATF mission.
- How critical the asset or unit is to the accomplishment of the AATF mission.
- How vulnerable the target is to air attack.
- How quickly it can resume operations after it has been attacked.
- The enemy's ability to attack the asset.
- Coverage provided by other AD systems.

AD priorities must be established for all periods to include before and after an operation, and would typically include protection for -

- Helicopter laager and assembly areas.
- Helicopter refueling and rearming points.

In planning an air assault operation, do not overlook the value--indeed, the necessity--of engineer support.

ENGINEER SUPPORT

Combat engineers are an integral part of the combined arms team. Engineers have the skills and equipment necessary to enhance friendly mobility and survivability, to counter the mobility of opposing forces, and to accomplish general engineer work. The engineers provide technical expertise and special equipment; the maneuver unit normally provides the needed manpower.

To know how to plan engineer support effectively, you must know the ways in which engineer support can be used.

Categories of Support

Combat engineers provide four categories of support: mobility, countermobility, survivability, and general engineering.

Mobility. Engineers reduce or eliminate the effects of obstacles to improve movement of maneuver forces and critical supplies. In support of air assault operations, engineers assist mobility by constructing or expanding helicopter LZs, FARPs, low-altitude parachute extraction systems (LAPES), and landing strips, and by maintaining, repairing, and rehabilitating existing forward aviation maintenance sites.

Countermobility. Engineers construct obstacles to reinforce terrain to delay, disrupt, and kill the enemy. Countermobility increases time for target acquisition and maximizes the effectiveness of direct and indirect fire systems.

Survivability. This involves protective position development: developing earth berms, dug-in positions, and overhead protection to reduce the effectiveness of enemy fire. In air assault operations, this could include protection of aircraft and fuel facilities.

General engineering. These engineer missions do not directly contribute to the mobility, countermobility, and survivability of committed maneuver units. They are, however, essential for logistic support to include construction, improvement, and maintenance of rear area airfields.

Engineer assets must be properly positioned in relation to the AATF to get the greatest effectiveness from them.

Command and Support Relationships

The preferred engineer support relationship is DS. However, to conduct the air assault, engineers should be attached for movement only. During movement, engineers should be organized into squad-size elements and integrated into the air movement of infantry units. Once the movement is completed, the engineers should revert to DS and be taskorganized no lower than platoon level.

As an air assault operation planner, you can usually expect certain engineer assets to be made available to the AATF. How you use them depends on any number of factors.

Employment of Engineer Assets

Engineer allocation to the brigade depends on METT-T, but will commonly be one company from the divisional combat engineer battalion. When requirements exceed the capabilities of one company, additional resources from either the division engineer battalion or support corps engineer units may be made available.

At the task force level, the number of engineer personnel and their relationship to the TF is dependent on METT-T. Even if no support relationship is established, engineers may have assigned missions in the AATF area and coordination must be maintained. This coordination is best effected by detailing an

officer and an NCO from the supporting engineer company to the AATF for the duration of the operation.

The use of available assets is an important planning function.

Plan and prioritize. The use of a scarce resource, such as combat engineers, must be carefully planned. The AATF engineer is part of the planning process from the beginning. The AATFC, S3, and the engineer work together to plan the use of the engineer assets and establish priorities. The engineer then advises the commander on how best to use assets based on time, personnel, equipment, and munitions available. A clear list of priority tasks is determined based on the AATFC's guidance and the engineer's recommendations.

Integrate. The AATFC ensures that the engineer effort is integrated into the scheme of maneuver and fire support plan. Fires, both direct and indirect, are planned to cover all obstacles. An obstacle placed where it cannot be covered by fire is a wasted effort. Therefore, the S3 ensures that he includes the FSO and engineer together in his planning effort.

In addition, the AATFC and S3 direct the integration of AATF personnel into the accomplishment of all engineer work. Engineer assets must be placed well forward in the scheme of maneuver to assist the mobility of maneuver forces in the critical, early stages of attack.

Control. The AATFC supervises the accomplishment of the engineer's mission and he prioritizes it. Changes in the situation may require changes in the priority of engineer work and the AATFC and/or S3 communicate such changes to the engineer.

Support. Mobility, countermobility, and survivability tasks are the responsibility of the AATF, not the engineer. While the engineer unit will provide much of the manpower allocated to these functions, use of other elements is normal. An example is the use of infantry to construct obstacles under the supervision of an engineer.

To allow all engineer assets to be used for engineer tasks, the AATF combat elements usually provide security for the engineers. The CSS for the engineer unit is provided by the parent engineer unit except when engineers are attached. Regardless of the command and support relationship, the AATF provides Class IV and Class V stores to support its engineer operations.

Execute. The engineers accomplish their mission in support of the AATFC's scheme of maneuver.

Special considerations involve heavy equipment found in engineer battalions, other than air assault or airborne units, which is generally too heavy to be air assaulted. Plans must be made to link up with the equipment later in the operation. If air-movable heavy equipment is available to the AATF, their capability is greatly increased. Resupply of diesel fuel then becomes an important planning consideration.

Another consideration is the special equipment necessary to slingload engineer equipment (chain leg sets and A-22 bags). This equipment is not normally available from the aviation units but will be provided by the engineer units possessing air-movable heavy equipment. When air-movable heavy equipment is not available, engineers must be prepared to construct obstacles and barriers and assist with survivability tasks by employing hand tools, explosives, and field expedient methods.

Besides planning the combat and combat support units, you must make provisions for combat service support units when you plan an air assault operation.

COMBAT SERVICE SUPPORT--PLANNING

Combat service support (CSS) for air assault operations must be planned, organized, and executed to support a rapid tempo in highly mobile and widely dispersed operations. The traditional doctrinal distances and responsibilities do not always apply to air assault operations.

The air assault logistical planner must recognize this from the outset and be prepared to adapt and innovate with the resources at hand. Just as the AATF is tailored for combat operations by air, the logistical system must be tailored to support by air and is therefore dependent upon considerable outside support.

Planning CSS for an air assault operation usually falls to the AATF S4.

Air Assault Task Force S4

It is imperative that the AATF S4 be involved in the planning of air assault operations from the initial stages onward. This ensures that all facets and constraints of logistical support are considered, and provides the lead time necessary to organize and position those units and resources that are required to support the mission.

The S4 and the S3 must coordinate closely and continuously throughout any air assault operation. Both must share the same resource for moving both combat power and sustaining assets--the helicopter.

To organize CSS for air assault operations, the logistical planner must know -

- The task force mission.
- The concept and duration of the operation.
- The task organization, to include densities of personnel, weapon systems by type, equipment by type, and aircraft by type.

He must also consider the impact of -

- Enemy situation.
- Weather.
- Terrain.
- Reliance on air lines of communication.
- Great distances between supporting and supported units.
- Large ammunition and aviation fuel consumption rates.

The prudent air assault logistical planner will ensure that CSS is provided not only for his organic and attached elements, but also for DS or OPCON units. Although the AATF does not have the inherent responsibility for CSS to OPCON, DS, or GS units, it does have the responsibility to ensure that CSS is coordinated for the supporting unit(s).

The coordination expressly designates who provides CSS throughout the operation. When a large attachment joins the AATF, the attachment should bring appropriate amounts of its own CSS assets from its parent unit. These assets are controlled by the AATF administrative logistics center to provide coordinated CSS to the attached unit.

Getting the supplies to the AATF in a timely manner requires the right CSS organization.

COMBAT SERVICE SUPPORT ORGANIZATION

The AATF is supported by both organic and external elements organized to push supplies, materiel, fuel, and ammunition forward by air.

A brigade-size AATF must rely on the forward area support team (FAST) or the forward support battalion (FSB) to support the operation. When the AATF is organized around an infantry battalion nucleus, a task-organized FSSE may be dedicated to supporting the air assault operation.

A battalion AATF FSSE would typically consist of -

- Medical support--a light shocks section.
- Maintenance contact teams for communications, automotive, armament, and recovery.
- Class III (ground) and Class V support sections.

The exact organization and disposition of CSS elements is a function of the AATF's mission and anticipated follow-on operations. Normally, two options for organizing and positioning CSS elements prevail:

- If the AATF anticipates being extracted from the objective area following mission completion, unit trains and supporting CSS elements are not normally displaced forward but remain in the brigade support area (BSA) or other area.
- If the AATF is to remain in the air assault objective area to link up with other forces or to conduct extensive follow-on operations, CSS elements would initially be provided by moving FSSEs and combat trains forward when the enemy situation permits.

All of these must be taken into account when planning the AATF trains.

Air Assault Task Force Trains

The trains for all AATF elements must be organized, located, and controlled so as to facilitate the consolidation, packaging, and air movement of support packages configured to unit size (normally company or platoon).

The organization of trains varies with the mission assigned the AATF and the CS and CSS available. Trains may be centralized in one location (unit trains) or they may be echeloned in two or more locations (echeloned trains).

It is normally appropriate to centralize all AATF logistical assets at one location as unit trains under the control of the AATF S4. This provides ease of coordination, control, and security of logistical assets, and allows for the most efficient use of logistical support helicopters.

Echeloned trains are normally used only when operations extend over vast distances such as might be expected in the delay or during an economy-of-force or security mission.

The AATFC would normally elect to echelon his trains when he feels that CSS must be collocated with maneuver units to provide immediate, dedicated support.

The AATFC normally moves only essential support elements to the objective area.

Just as the air assault operation itself has command, control, and communications requirements, so do the CSS elements.

Command, Control, and Communications (C^3)

The AATF S1 and S4, under the direction of the AATF executive officer (XO), operate the administrative and logistics center. They have overall responsibility for CSS command and control.

Timely and effective CSS depends on a good communications system. At AATF level, CSS communication may be by radio, courier, or radio teletypewriter (RATT). The AATF administrative and logistics center radio net is used for most administrative and logistic traffic. For lengthy administrative and logistical reports, messenger or RATT should be used. "As of" and "due" times for reports at all levels should take this into consideration, allowing more time for long reports to be delivered by messenger.

The administrative and logistics center is the net control station (NCS) for the administrative and logistics net. The S4, S1, headquarters company commander, maintenance officer, support platoon leader, medical platoon leader, company first sergeants, and others as required operate in the administrative and logistics net.

When FM radio communication over the AATF administrative and logistics net is not possible due to the distance between stations, hard-copy messages are sent with resupply or evacuation aircraft.

Capabilities of and requirements for helicopter slingload operations must be considered when planning for AATF CSS.

Helicopter External Load operations

Transporting supplies and equipment by helicopter external (sling) load has the advantage of rapidly moving heavy, outsized, or urgently needed items directly to the using unit. The logistical planner can

enhance the sustainment of the AATF by planning well in advance for slingload operations and by understanding the limitations imposed by external load operations.

External load limitations to be considered include:

- If a cargo is too light or too bulky, it will not "fly" properly when suspended under the aircraft at cruise airspeeds.
- The external load must not exceed a helicopter's lift (under given atmospheric conditions) or hook capabilities (8,000 pounds for the UH-60).
- Airspeeds must be slower when helicopters carry external loads.
- Dust, sand, or snow, which would be blown during hover for pickup or delivery of cargo, may preclude safe external load operations.
- The higher altitudes, which must be flown with sling loads, may subject the aircraft to more ground fire.
- Extended hovering to pickup or deliver a slingload during darkness is inherently more dangerous than similar daylight operations.
- The availability of suitable slings, cargo nets, cargo bags, and other air delivery items may preclude or limit external load operations.

There are normally three different elements involved in a slingload mission: the supported unit, the aviation unit, and the receiving unit.

The supported unit (normally the AATF S4) is responsible for:

- Selecting, preparing, and controlling the PZ.
- Requisitioning all the equipment needed for slingload operations, including slings, A-22 bags, cargo nets, and containers.
- Storing, inspecting, and maintaining all slingload equipment.
- Providing a sufficient number of trained ground crews for rigging and inspecting all the loads, guiding the helicopters, hooking up the loads, and clearing the aircraft for departure.
- Securing and protecting sensitive items of supply and equipment.
- Providing load derigging and disposition instructions to the receiving unit.
- Providing disposition instructions to the receiving and aviation units for the slings, A-22 bags, cargo nets, and containers.

The aviation unit is responsible for:

- Effecting and/or establishing coordination with the supported and receiving units.
- Advising the supported unit on the limitations of the size and weight of the loads that may be rigged.

- Advising the supported and receiving units on the suitability of the selected PZs and/or LZs.
- Providing assistance for the recovery and return to the PZ of the slings, A-22 bags, cargo nets, and containers as required by the supported unit.
- Establishing safety procedures that will ensure uniformity and understanding of duties and responsibilities between the ground crew and flight crew.

The receiving unit is responsible for:

- Selecting, preparing, and controlling the LZ.
- Having trained ground crews available to guide the aircraft in and derig the load.
- Coordinating with the supported (sending) unit for the control and return of the slings, A-22 bags, or any other items that belong to the supported unit, and returning them as soon as possible.
- Preparing, coordinating, and inspecting backloads, such as slings, A-22 bags, and so forth, and having them ready for hookup or loading.

The capabilities and missions of CSS are one thing; fulfilling those capabilities and missions is another. You must understand how CSS works in an air assault environment.

COMBAT SERVICE SUPPORT EXECUTION

The AATF is normally configured to conduct the initial assault with one to three days of accompanying supplies to ensure some degree of self-sustainment. When the enemy situation permits, resupply is accomplished by air on a routine basis to keep supplies at the one-to-three-day level.

Supply

The most efficient method for conducting the resupply of forward AATF units is the logistics package (LOGPAC) method. A LOGPAC is a resupply element based on a day's logistics requirements for a company. It is organized in the unit trains by the company supply sergeant and the support platoon leader and prepared for air movement. The AATF SOP establishes the standard LOGPAC.

Supplies going forward from the trains move methods that reduce loading and unloading times. Palletized or external slingloads reduce the ground-time vulnerability of aircraft because they can be unloaded quickly.

When preparing the loads, the S4 provides essential equipment and personnel (for example, hookup teams, ground guides, signalmen, slings, pallets, nylon webbing, chain link slings, and clevises).

Supplies are one aspect of the CSS function. Maintenance is another.

Maintenance

Maintenance involves inspecting, testing, servicing, repairing, requisitioning, rebuilding, recovering, and evacuating. The assault echelon is not normally accompanied by maintenance personnel. During air assault operations, repair above the operator level is accomplished one of two ways:

- Contact teams from unit or support maintenance may be flown forward to effect immediate repair of critical equipment.
- Deadlined and/or damaged equipment is evacuated by air.

Most of CSS is dedicated to the support, supply, or maintenance of equipment. However, there are vital services provided directly to the soldiers.

Field and Personnel Support Services

These services for the soldier are an important part of the overall support effort and continue during air assault operations. However, these services are rarely part of an air assault operation. Rather, they are accomplished in a rear area outside the air assault area of operations.

Medical support is important enough to be discussed here at some length.

Medical Support

Support. This is provided by the medical platoon and the medical section of the FSSE, when available. The support is planned by the AATF medical platoon leader and is addressed in the administrative and logistics annex to the OPORD. It includes -

- Location of far forward treatment sites.
- Ground and air evacuation plans and/or routes.
- Location of support hospitals.
- Communications instructions.

To adequately support the mission, the platoon leader should be included in all operational and/or tactical briefings.

Medical evacuation. The primary means for AATF medical evacuation is by MEDEVAC helicopter. Inflight medical care is essential for those patients whose condition is serious enough to require air evacuation. Medical evacuation crews will deliver patients to proper treatment facilities.

Control. There are two options for controlling MEDEVAC requests:

- Allow subordinate units to request MEDEVAC directly from the medical unit.
- Receive and consolidate requests, establish casualty priorities, and dispatch MEDEVAC aircraft.

Coordination. When possible, the AATF S1 coordinates directly with the MEDEVAC unit commander or section leader. He provides the unit a complete copy of the AATF's CEOI, PZs, LZs, and flight route overlay. This makes it possible for the MEDEVAC helicopter pilot to establish radio contact on the internal radio net of the supported unit. When MEDEVAC communications take place at the AATF level, they are usually done on the administrative and logistics net.

Since the MEDEVAC unit has the PZs, LZ, and flight routes, the AATFC can direct MEDEVAC aircraft through his sector via a specific flight route. This lessens interference with ground operations, indirect fires, and TAC AIR.

A technique used in the employment of MEDEVAC helicopters is to have them trail the AATF while it is en route. This ensures that the helicopters are immediately available to take on wounded and ensures pilot familiarity with the route to the objective area. If evacuation is required later, faster response is possible.

Nuclear, biological, and chemical. In the event that contaminated casualties have to be evacuated by helicopter, the aircrew should be warned before actual pickup. When flying with these casualties, all personnel on the aircraft must be in appropriate mission-oriented protective posture (MOPP) and land downwind from the medical aid station after notifying the station of casualty status and the contaminating agent.

Transportation assets come under CSS planning requirements.

Transportation.

In addition to their assault and assault support roles, utility and medium (CH-47) helicopters play an important role in providing CSS for the AATF. Helicopters are relied upon for movement of supplies, materiel, fuel, ammunition, maintenance contact, and evacuation of damaged equipment.

The discussion of helicopters as transportation assets brings up the subject of aviation support considerations.

AVIATION SUPPORT CONSIDERATIONS

Aviation units consume large amounts of fuel, ammunition, Class IX, and maintenance support during intensive air assault operations. Although aviation units are normally responsible for meeting their own unique logistical support requirements, the air assault logistical planner must be aware of the requirements, plan for them, and be prepared to assist as necessary.

For example, requirements for forward area rearming and refueling points must be considered.

Forward Area Rearming and Refueling Points

FARPs are established by aviation units to provide for the rapid rearming and refueling necessary to sustain a fast pace. FARPs are -

- Established in the vicinity of the ground unit exercising operational control (behind the FEBA, out of range of enemy artillery).
- Positioned to reduce turnaround time, thus optimizing helicopter availability, and repositioned frequently to avoid detection and destruction.
- Fully mobile using ground vehicles and helicopters.
- Capable of operation within 30 minutes of installation and capable of redeployment within 30 minutes.
- Capable of performing refueling and rearming operations rapidly and efficiently.

With such heavy dependence on aircraft, maintenance and recovery of aircraft become high-priority planning considerations.

Aircraft Maintenance and Recovery

Maintenance. Aircraft have substantial maintenance requirements. However, maintenance is kept to a minimum in the operational area. A method used to accomplish this and still have responsive maintenance is to have aircraft standing by to move maintenance contact teams where required.

In addition, a maintenance aircraft and personnel may accompany the flight. If an aircraft has maintenance problems during movement, maintenance personnel may be able to repair it and save valuable aircraft operation time.

Recovery. If an aircraft is forced to land on enemy terrain due to mechanical problems or combat damage, every effort is made to protect the aircraft and crew until they can be evacuated. However, mission execution has priority over rescue and recovery operations.

The AATFC is notified immediately of any downed aircraft. He takes action to secure and recover the crew and aircraft with his resources or requests recovery by higher echelon. When an aircraft is downed, the senior occupant assumes command and establishes a defense of the area or organizes evasive action. If an aircraft is abandoned, steps are taken to destroy it to preclude its capture or the capture of sensitive equipment or documents.

The level of authority required to destroy the aircraft is established in higher echelon SOPs (it may be covered in the OPORD). However, if capture is imminent, the aircraft, equipment, or documents should be destroyed. Recovery of a downed aircraft is accomplished by the aviation unit. The AATFC may have to provide security for the recovery team.

CONCLUSION

This lesson has given you the basic considerations behind an air assault operation. You have learned the characteristics of an air assault operation, how an air assault operation relates to the fundamentals of the AirLand Battle doctrine, and the troop leading procedures, planning considerations, and sequence of actions in preparing for an air assault operation.

In laying the foundation of the air assault operation, you are prepared for the basics of planning an air assault

operation, the five basic plans that combine to form an air assault operation plan.

PRACTICE EXERCISE 1

Instructions This practice exercise will show you how much you have learned in this lesson. Answer each question. When you are done, check your answers.

GENERAL SITUATION: You are the assistant S3 (plans) of a brigade in an infantry division. You are planning operations as part of a field training exercise.

1. Your force is attacking along a road through a broad valley against an enemy inferior in numbers but with their position reinforced by natural terrain features. You recommend to the commander that he should mount an air assault operation against the enemy because this type of operation will allow your forces to

   - ○ A. attack the enemy using a frontal assault.
   - ○ B. bypass obstacles and strike the objective.
   - ○ C. conduct concentrated deep attacks and raids against the enemy.

2. Your brigade is conducting a withdrawal in order to establish a defensive position on more favorable terrain. The enemy opposing you has airborne forces attached and you are concerned about an airborne drop behind your unit to prevent your forces from establishing a defensive position on favorable terrain. You inform the S3 that it might be wise to conduct an air assault operation ahead of the withdrawal in order to -

   - ○ A. rapidly concentrate or redeploy forces to extend the area of influence.
   - ○ B. react rapidly to tactical considerations to conduct exploitation operations.
   - ○ C. rapidly secure and defend key terrain in an operational area.

3. As the S3 plans officer, planning an air assault operation, you are privy to intelligence reports which indicate that the opposing force may use (simulated) chemical agents. After discussing this problem with the NBC officer, you inform the S3 that the OPFOR's use of chemical agents could

   - ○ A. require the use of more aircraft so that the troops can be dispersed over a wider area.
   - ○ B. jeopardize the air assault operation due to the limited NBC protection offered by aircraft.
   - ○ C. delay the operation until an anti-NBC shroud can be fitted to the aircraft.

4. You are planning an air assault operation which will lift two companies to the flanks of a defending force. During the briefing by the brigade commander, he stressed to the company commanders that while the brigade was planning the air assault operation, the execution must be

   - A. decentralized and aggressive.
   - B. delegated to the battalion commander.
   - C. controlled through radio communication.

5. You, as the plans officer, are briefing the commander on possible plans for an air assault operation against the opposing forces. The commander inquires about the feasibility of a night operation, to which you respond that night operations are possible but they

   - A. require more aviation assets.
   - B. achieve less surprise than daytime operations.
   - C. require more planning and preparation time.

6. While planning the air assault operation, you closely coordinate with the S2 officer to see how he has analyzed the intelligence preparation of the battlefield (IPB). Particularly, through IPB, you want to evaluate the enemy's capabilities, probable courses of action, and

   - A. evaluate organic weapons.
   - B. evaluate vulnerabilities.
   - C. evaluate order of battle.

7. You, as the S3 plans officer, are not only responsible for the planning of the air assault operation, but also become involved in the organization of the air assault task force itself. While in a mission briefing, you discuss with the S3 officer the most important factor in determining the AATF organization, which is

   - A. determining the availability of aviation assets.
   - B. evaluating the air assault qualifications of the soldiers.
   - C. determining support requirements.

8. While writing the plans for the impending air assault operation, you, as the S3 plans officer, have received guidance from the commander that he wants the command and control element well forward and mobile, which means that you will be

   - A. planning for a main command post.
   - B. planning for a command and control outpost.
   - C. planning for a tactical command post.

9. In planning the air assault operation, you must take into account various factors. One of the factors that you must analyze is the terrain, and this analysis is

   - A. conducted strictly from a map recon.
   - B. conducted using the acronym OCOKA.
   - C. conducted by primarily evaluating key terrain features.

10. You, as the S3 plans officer, are planning a raid which incorporates an air assault operation. In addition to planning the raid and all of the other standard supporting plans, you must

    - A. formulate a withdrawal plan.
    - B. provide for strict control procedures.
    - C. task organize the raiding forces.

11. Fire support is an essential part of the air assault plan on which you are working. You coordinate with the fire support officer in order to coordinate the priority of fires outlined by the commander. During a meeting with unit commanders, you explain to them that priority of fires by unit

    - A. indicates that units will receive fire in the order fire is requested.
    - B. indicates each unit will receive a portion of the artillery assets when required.
    - C. indicates which unit will receive fire in the event several units request it at once.

LESSON 1. PRACTICE EXERCISE - ANSWERS

1. Your force is attacking along a road through a broad valley against an enemy inferior in numbers but with their position reinforced by natural terrain features. You recommend to the commander that he should mount an air assault operation against the enemy because this type of operation will allow your forces to

A. attack the enemy using a frontal assault.
B. bypass obstacles and strike the objective.
C. conduct concentrated deep attacks and raids against the enemy.

To avoid heavy loss of attacking friendly forces before reaching objective and to achieve surprise.

2. Your brigade is conducting a withdrawal in order to establish a defensive position on more favorable terrain. The enemy opposing you has airborne forces attached and you are concerned about an airborne drop behind your unit to prevent your forces from establishing a defensive position on favorable terrain. You inform the S3 that it might be wise to conduct an air assault operation ahead of the withdrawal in order to -

A. rapidly concentrate or redeploy forces to extend the area of influence.
B. react rapidly to tactical considerations to conduct exploitation operations.
C. rapidly secure and defend key terrain in an operational area.

Key terrain should be defended to eliminate surprise by the enemy.

3. As the S3 plans officer, planning an air assault operation, you are privy to intelligence reports which indicate that the opposing force may use (simulated) chemical agents. After discussing this problem with the NBC officer, you inform the S3 that the OPFOR's use of chemical agents could

A. require the use of more aircraft so that the troops can be dispersed over a wider area.
B. jeopardize the air assault operation due to the limited NBC protection offered by aircraft.
C. delay the operation until an anti-NBC shroud can be fitted to the aircraft.

With the initial assault being light and without full protection of other assets available, it is vulnerable to enemy NBC.

4. You are planning an air assault operation which will lift two companies to the flanks of a defending force. During the briefing by the brigade commander, he stressed to the company commanders that while the brigade was planning the air assault operation, the execution must be

A. decentralized and aggressive.
B. delegated to the battalion commander.
C. controlled through radio communication.

It will not allow the enemy time to plan for a counterattack or break your force concentration and momentum.

5. You, as the plans officer, are briefing the commander on possible plans for an air assault operation against the opposing forces. The commander inquires about the feasibility of a night operation, to which you respond that night operations are possible but they

A. require more aviation assets.
B. achieve less surprise than daytime operations.
C. require more planning and preparation time.

Requirements and actions are not easily executed as those during daylight hours.

6. While planning the air assault operation, you closely coordinate with the S2 officer to see how he has analyzed the intelligence preparation of the battlefield (IPB). Particularly, through IPB, you want to evaluate the enemy's capabilities, probable courses of action, and

A. evaluate organic weapons.
B. evaluate vulnerabilities.
C. evaluate order of battle.

In order to determine the methods of attacks and planning on the enemy weakness to defeat him, you must find out where he is vulnerable.

7. You, as the S3 plans officer, are not only responsible for the planning of the air assault operation, but also become involved in the organization of the air assault task force itself. While in a mission briefing, you discuss with the S3 officer the most important factor in determining the AATF organization, which is

A. determining the availability of aviation assets.
B. evaluating the air assault qualifications of the soldiers.
C. determining support requirements.

Without the adequate availability of aviation support, the AATF organization cannot function properly.

8. While writing the plans for the impending air assault operation, you, as the S3 plans officer, have received guidance from the commander that he wants the command and control element well forward and mobile, which means that you will be

A. planning for a main command post.
B. planning for a command and control outpost.
C. planning for a tactical command post.

A tactical command post is necessary to keep control of elements of the AATF.

9. In planning the air assault operation, you must take into account various factors. One of the factors that you must analyze is the terrain, and this analysis is

A. conducted strictly from a map recon.
B. conducted using the acronym OCOKA.
C. conducted by primarily evaluating key terrain features.

This factor has an overall influence on the support of aviation operations used within the AATF.

10. You, as the S3 plans officer, are planning a raid which incorporates an air assault operation. In addition to planning the raid and all of the other standard supporting plans, you must

A. formulate a withdrawal plan.
B. provide for strict control procedures.
C. task organize the raiding forces.

A withdrawal is planned because of the limited support available and the type of operation being conducted.

11. Fire support is an essential part of the air assault plan on which you are working. You coordinate with the fire support officer in order to coordinate the priority of fires outlined by the commander. During a meeting with unit commanders, you explain to them that priority of fires by unit

A. indicates that units will receive fire in the order fire is requested.
B. indicates each unit will receive a portion of the artillery assets when required.
C. indicates which unit will receive fire in the event several units request it at once.

Each unit commander needs to know what priority they will receive supporting fires so they can plan properly.

If you had a hard time getting the right answers, go back and review the lesson. If you did well on this practice exercise, you should be ready to start the next lesson.

LESSON 2

AIR ASSAULT OPERATIONS PLANNING

TASK

Identify the planning considerations for the five basic plans, the ground tactical plan, the landing plan, the air movement plan, the loading plan, and the staging plan which together comprise the air assault operations plan.

CONDITIONS

Given the subcourse material for this lesson, a training scenario, and extracts, as applicable, the student will complete the practice exercise at the end of this lesson.

STANDARD

The student will demonstrate his comprehension and knowledge of the task by identifying the planning considerations for the five basic plans, the ground tactical plan, the landing plan, the air movement plan, the loading plan, and the staging plan which together comprise the air assault operations plan.

REFERENCES

FM 90-4

This lesson discusses the detailed planning that is the key to any successful operation. But, in order to have a successful plan, you must first know the considerations that must be addressed in order to formulate a comprehensive plan and the correct procedures which must be followed to ensure that the plan is in the correct format and includes all the required information.

Learning Event 1:
IDENTIFY THE CHARACTERISTICS AND PLANNING CONSIDERATIONS FOR A GROUND TACTICAL PLAN

The air assault operation is planned backward from the objective. This means that the first plan developed is the one that covers what the AATF does when it finally gets where it is going. Air assault operations planning begins, then, with the ground tactical plan.

The foundation of a successful air assault operation is the commander's ground tactical plan, around which subsequent planning is based. The ground tactical plan specifies actions in the objective area to ultimately accomplish the mission and address subsequent operations.

To prepare a ground tactical plan, you must know its elements.

ELEMENTS OF THE GROUND TACTICAL PLAN

The ground tactical plan for an air assault operation contains essentially the same elements as any other infantry attack, but differs in that it is prepared to capitalize on speed and mobility in order to achieve

surprise. Assault echelons are placed on or near the objective and organized so as to be capable of immediate seizure of objectives and rapid consolidation for subsequent operations.

If adequate combat power cannot be introduced quickly into the objective area, the air assault force must land away from the objective and build up combat power. The air assault force then assaults like any other infantry unit. The effectiveness of the air assault operation is thereby diminished.

The scheme of maneuver may assume a variety of possibilities, depending on the commander's evaluation of METT-T including in particular the availability of LZs in the area. The plan should include -

- Missions of all task force elements and methods for employment.
- Zones of attack, sectors, or areas of operations with graphic control measures.
- Task organization to include command relationships.
- Location and size of reserves.
- Fire support to include graphic control measures.
- Combat service support.

This plan is prepared by the AATF staff with input from all task force elements and is sufficiently detailed to facilitate understanding by subordinate commanders. It is imperative that all aircrews know this ground tactical plan and the ground commander's intent.

Learning Event 2:
IDENTIFY THE CHARACTERISTICS AND PLANNING CONSIDERATIONS FOR A LANDING PLAN

Once the ground tactical plan has been developed, you can develop a landing plan.

GENERAL

The landing plan must support the ground tactical plan. This plan sequences elements into the area of operations, ensuring that units arrive at designated locations and times prepared to execute the ground tactical plan.

There are a number of general considerations affecting the landing plan:

- The availability, location, and size of potential LZs are overriding factors.
- The AATF is most vulnerable during landing.
- Elements must land with tactical integrity.
- Troops are easily disoriented if the briefed landing direction changes and they are not kept informed.

- Initially, there may be no other friendly units in the area. The AATF must land prepared to fight in any direction.
- The landing plan should offer flexibility so that a variety of options are available in developing a scheme of maneuver.
- Supporting fires (artillery, NGF, CAS, attack helicopters) must be planned in and around each LZ.
- Although the objective may be beyond the range of supporting artillery fire, artillery or mortars may be brought into the LZ(s) early to provide fire support for subsequent lifts and on the objective.
- The plan should include provisions for resupply and medical evacuation by air.

There are a number of options and criteria governing selection of landing zones (LZs).

SELECTION OF LANDING ZONES

There are nine criteria governing selection of landing zones.

Selection Criteria

LZs are selected by the AATFC or his S3 with technical advice from the AMC or his liaison officer. Small-unit leaders should be proficient in the selection of landing zones and also in the control of aircraft. They do so using the following criteria:

Location. It can be located on, near, or away from the objective, depending on the factors of METT-T.

Capacity. The size determines how much combat power can be landed at one time. This also determines the need for additional LZs or separation between serials.

Alternates. An alternate LZ should be planned for each primary LZ selected to ensure flexibility.

Enemy disposition and capabilities. Enemy troop concentrations, air defenses, and their capability to react to an AATF landing nearby are considered when selecting an LZ.

Cover and concealment. LZs are selected that deny enemy observation and acquisition of friendly ground and air elements while they are en route to and/or from (and in) the LZ.

Marking landing zones.

- Day. A ground guide will mark the landing zones for the lead aircraft by holding an M16A1 rifle over his head, by displaying a folded VS-17 panel chest high, or by other identifiable means.
- Night. The code letter Y (an inverted Y) is used to mark the landing point of the lead aircraft at night. Chemical light sticks or beanbag lights may be used to maintain light discipline (Figure

3). When more than one aircraft will be landing at the same landing zone, an additional light will be required for each aircraft.

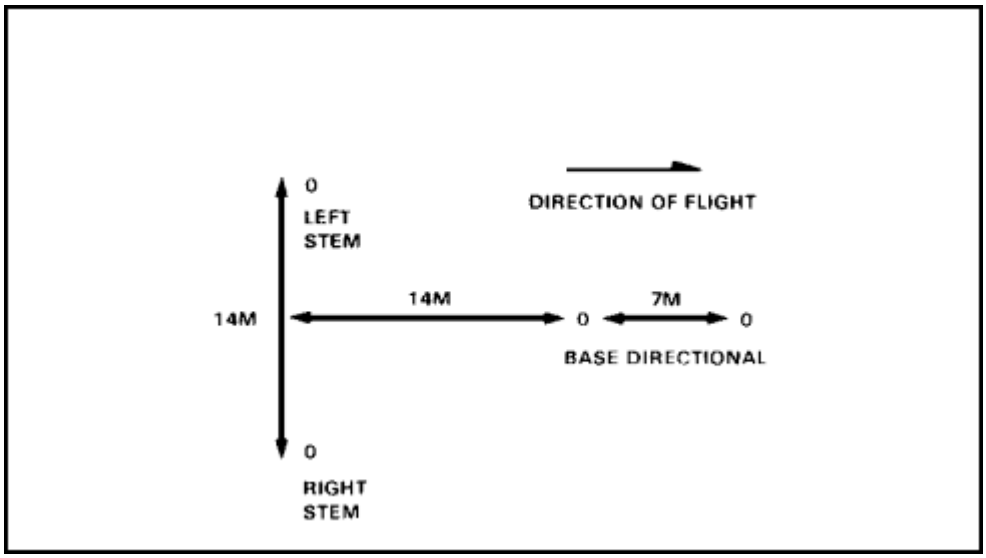

FIGURE 3. INVERTED Y.

For observation, utility, and attack aircraft, each additional aircraft landing point will be marked with a single light emplaced at the exact point that each aircraft is to land. When marking landing zones for aircraft (CH-47, CH-53, CH-54), each additional landing point will require marking with two lights. They will be placed 10 meters apart and will be aligned in the aircraft direction of flight.

Obstacles. If possible, the AATF should land on the enemy side of obstacles when attacking and use obstacles tp protect LZs from enemy at other times. LZs must be free of obstacles. Engineers must be organized for contingency breaching of obstacles. For night and limited visibility operations, all obstacles will be marked with red lights. The following criteria will be used in marking obstacles:

- If the obstacle is on the aircraft approach route, both near and far sides of the obstacle will be marked.
- If the obstacle is on the aircraft departure route, the near side of the obstacle will be marked.
- If the obstacle protrudes into the landing zone, but not in the flight route of the aircraft, the near side of the obstacle will be marked.
- Large obstacles on the approach route will be marked by circling the obstacle with red lights.

Identification from the air. LZs should be readily identifiable from the air. They should be marked with chemical lights, preferably infrared type, if the assault is conducted with personnel wearing night vision goggles. This assumes that a friendly reconnaissance unit has reconned and marked the LZs.

Control of aircraft. Approaching aircraft are controlled by the use of arm-and-hand signals to transmit guidance for landing. The signalman is positioned to the right front of the aircraft where he can best be seen by the pilot. Signals at night are given by using lighted batons or flashlights in each hand. When using flashlights, care will be taken to avoid blinding the pilot. Batons and flash-lights will remain

lighted at all times when signaling. The speed of arm movement indicates the desired speed of aircraft compliance with the signal.

Approach and departure routes. Approach and departure flight routes should avoid continued flank exposure of aircraft to the enemy.

Weather. Reduced visibility or strong winds may preclude or limit the use of marginal LZs.

A number of options can affect choice of landing zones.

Options to Consider

If there are options available in selecting LZs, the ones that best facilitate mission accomplishment are chosen. This choice involves whether to land on the objective or to land away from it and maneuver forces on the ground to the objective. Factors considered in making that determination are:

Combat power. This includes maneuver elements, firepower, and combat support assets that can be introduced into the area early in the operation. The timing usually depends upon the number of aircraft used and the availability of suitable LZs.

Enemy. This includes enemy strength and disposition in and around the objective area, including air defense systems.

Surprise. This is a goal that may be attained by careful use of terrain, cover and concealment, darkness, or reduced visibility created by weather or smoke. Surprise is sometimes achieved by landing on the objective.

Time. Time that is available for mission accomplishment. Limited time to complete the mission generally favors landing on or near the objective.

An air assault operation can use a single LZ or multiple LZs. The characteristics of each are discussed below.

Landing Zone Characteristics

In addition to deciding where to land in relation to the objective, a decision is made on whether to use a single LZ or multiple LZs.

Advantages of a single LZ.

- Allows concentration of combat power in one location (if the LZ is large enough).
- Facilitates control of the operation.
- Concentrates supporting fires in and around the LZ. Firepower is diffused if more than one LZ preparation is required.
- Provides better security for subsequent lifts.
- Requires fewer attack helicopters for security.

- Reduces the number of flight routes in the objective area, making it more difficult for enemy intelligence sources to detect the air assault operation.
- Centralizes any required resupply operations.
- Concentrates efforts of limited LZ control personnel and engineers on one LZ.
- Requires less planning and rehearsal time.

Advantages of multiple LZs.

- Avoids grouping assets in one location and creating a lucrative target for enemy mortars, artillery, and CAS.
- Allows rapid dispersal of ground elements to accomplish tasks in separate areas.
- Reduces the enemy's ability to detect and react to the initial lift.
- Forces the enemy to fight in more than one direction.
- Reduces the possibility of troop congestion in one LZ.
- Eliminates aircraft congestion on one LZ.
- Makes it difficult for the enemy to determine the size of the air assault force and the exact location of supporting weapons.

If the objective is designated by a number, the LZ should be designated by a letter or code word to avoid confusion and preclude mix-ups. This avoids having an objective (OBJ) and LZ with the same designator; for example, OBJ1 and LZ1.

Once the landing zones are determined, you can turn your attention to landing formations.

Landing Formations

Aircraft formations on the LZ should facilitate off-loading and deployment for the assault. The number and type of aircraft and the configuration and size of the LZ may dictate the formation. Because contact is expected in the LZ, elements are landed ready to employ fire and movement.

An LZ formation should not be a picture-perfect formation with standardized distances between aircraft. Landing aircraft rapidly select a safe landing area as close to concealment as possible to reduce troop exposure. If possible, the PZ formation is the same as the LZ formation. This gives troops a preview of the LZ and gives them an idea of where they will be located in relation to other elements upon landing.

Fire support for the LZs must be planned at this time, even if the plan is not to fire before or during the landing.

Fires to Support the Landing Plan

Frequently, it is desirable to make the initial assault without preparatory fires in order to achieve tactical surprise. However, preparations are planned for each LZ so that they can be fired if needed. The decision to fire a specific LZ preparation is made by the AATFC. The FSO should travel with the AATFC to expedite fires and changes to preplanned fires. Fires will be planned along all routes leading to the LZ.

Planned fires for air assault operations should be intense and short but with a high volume of fire to maximize surprise and shock effect. The fires should end just before the first assault element's landing.

When developing fire support plans, consideration is given to:

Deception. False preparations are fired into areas other than the objective or LZ areas.

Loss of surprise. A preparation of long duration may reduce the possibility of surprise.

Availability of fire support. The FSO considers assets that can fire a preparation and coordinates with the artillery unit to arrange the preparation. Preparations by tactical aircraft or attack helicopters may be the only viable alternative in many cases. Preparations by USAF tactical aircraft are requested through the FAC.

Significant targets. A known or suspected enemy force, regardless of size, warrants an LZ preparation.

Shifting fires. Artillery fire continues throughout the assault phase, shifting from the LZ to known or suspected targets.

Obstacles to landing and maneuver. Some ordnance used in preparation (artillery), bombs, napalm) can cause craters, tree blowdown, fires, and LZ obscuration and therefore may not be desirable.

Scheduling fires. Fires are scheduled to be lifted or shifted to coincide with the arrival times of aircraft formations.

Positive control measures. Control measures must be established for lifting or shifting fires.

Ammunition. Basic load and resupply limitations.

Because CAS station time is limited by fuel and enemy air defenses, the sequencing of support fire is carefully controlled by the FSO to obtain maximum, continuous support. To ensure that all fire support assets are utilized at the correct time, the FSO must be constantly informed as to the status of the flight. This allows him to orchestrate fires to coincide with the actual arrival of assaulting elements at the LZ (Figure 4).

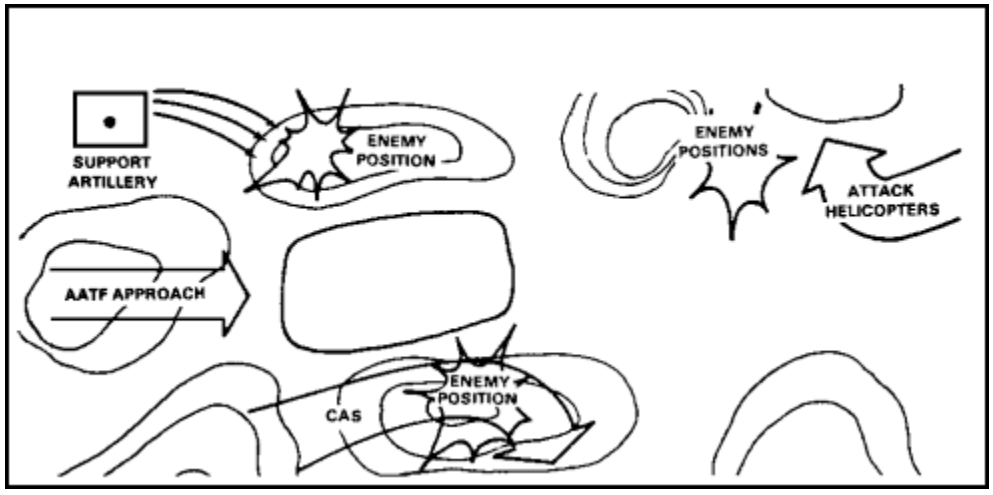

FIGURE 4. PREPARATORY FIRES AND AIR STRIKES.

Another method of continuing assault fire support is to shift indirect fires to one flank, conduct a simultaneous airstrike on another flank, and use the attack helicopter teams to orient on the approach and departure routes. This technique requires precise timing and assault formation navigation to avoid flight paths of other aircraft and gun-target lines of indirect fire weapons.

Learning Event 3:
IDENTIFY THE CHARACTERISTICS AND PLANNING CONSIDERATIONS FOR AN AIR MOVEMENT PLAN

Working backward from the landing plan, you would next develop the air movement plan.

GENERAL

The air movement plan is based on the ground tactical and landing plans. It specifies the schedule and provides instructions for air movement of troops, equipment, and supplies from PZs to LZs. It also provides coordinating instructions regarding air routes, air control points, and aircraft speeds, altitudes, and formations.

The planned use of attack helicopters, including security and linkup locations (if different from the PZ), should also be included in the air movement plan. When operations involve multiple lifts from the same PZ, a lift table is prepared to ensure lifts are properly organized.

The air movement plan is normally developed in coordination with the AMC, or the aviation liaison officer, who provides technical assistance and recommendations.

The first step in developing an air movement plan is to develop tentative flight routes.

DEVELOPMENT OF TENTATIVE FLIGHT ROUTES

Tentative flight routes are developed to control, project, and sequence aircraft movement. Careful consideration is given to the terrain and enemy forces. The AATF S2, S3, and AMC assist the AATFC in developing flight routes. The basic methods of developing tentative flight routes are by map study or photo review when time permits, considering the locations of friendly units, enemy disposition and air defense systems, and PZs and/or LZs.

A flight route consists of a start point (SP), release point (RP), and a flight path between the two. The fire support plan should include fire planning along the flight routes.

Flight routes are determined by start and release points.

DESIGNATION OF START POINT AND RELEASE POINT

The first step is to identify tentative SPs and RPs (Figure 5). The distance from the PZ to the SP should be no less than 3 to 5 kilometers to allow aircraft to achieve the desired airspeed, altitude, and formation after liftoff.

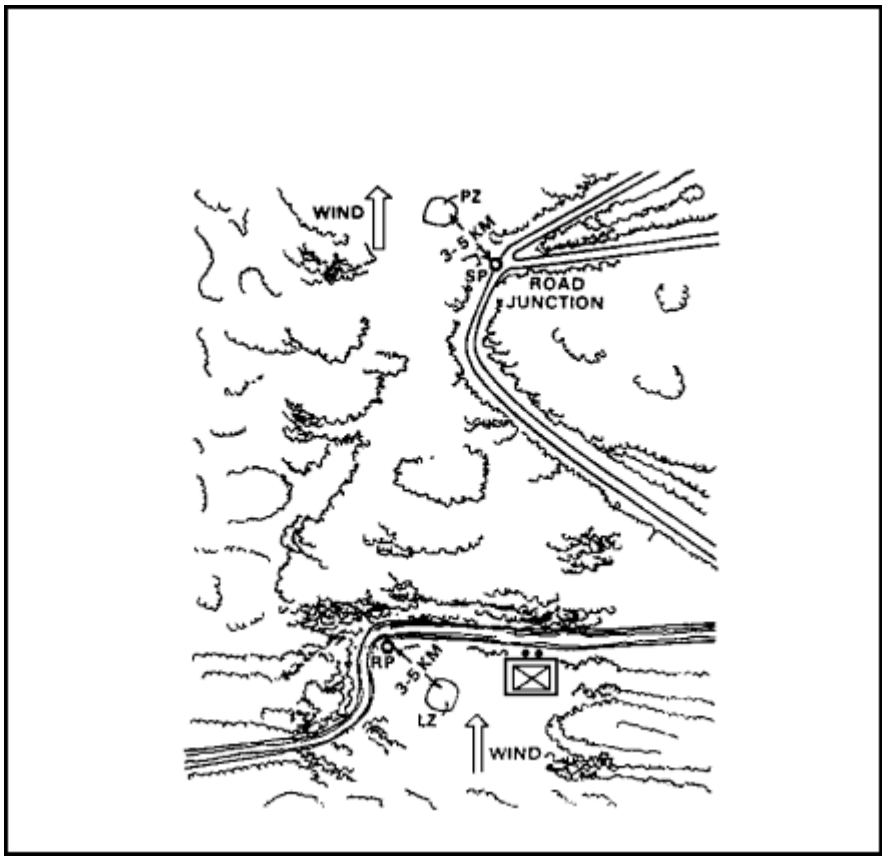

FIGURE 5. START AND RELEASE POINTS.

In this situation, the SP is within 3 to 5 kilometers of the PZ. It provides sufficient air maneuver space for helicopters to arrive at the SP in the prescribed en route formation at the proper airspeed.

The SP is located at a recognizable topographic feature for ease of identification. It facilitates lift-off from the PZ and heading into the wind. It is located to avoid known flight obstacles and enemy locations.

The RP is also 3 to 5 kilometers from the designated LZ. It is used as the final checkpoint for coordination of landing instructions and lifting or shifting of preparatory fires.

The distance from RP and the LZ is used by helicopter pilots to shift into landing formation, reduce speed, and land on their assigned LZ. The RP is also located at a recognizable topographic feature and avoids obstacles and enemy locations.

The distance from the RP to the LZ should allow the flight leader to reconfigure the formation and execute a tactical formation landing. In locating SPs and RPs, these considerations apply:

- Locate 3 to 5 kilometers from PZs and LZs, respectively. This allows two to three minutes flying time for coordination of the flight's en route procedures.
- Locate according to weather, obstacles, and enemy positions.
- Locate to facilitate liftoff and landing into the wind by the best flight path.

Pertinent information in the air movement plan appears in a document called the air movement table.

AIR MOVEMENT TABLE

The air movement table -

- Contains aircraft allocations.
- Designates number and type of aircraft in each serial.
- Specifies departure point, route to and from loading area, and loading, liftoff, and landing times.

The table is prepared jointly by the AATF staff and aviation personnel. It is completed in detail since it serves as the primary movement document. The table controls AATF movement from PZ to LZ as air assault forces fly to the LZ under radio listening silence (if possible).

The air movement table ensures that all personnel, equipment, and supplies are accounted for in the movement, that each aircraft is fully loaded, correctly positioned in the flight, and directed to the right LZ (see Figure 6, and Figure 6A). These tables must also include the refuel schedule for all lifts, if required.

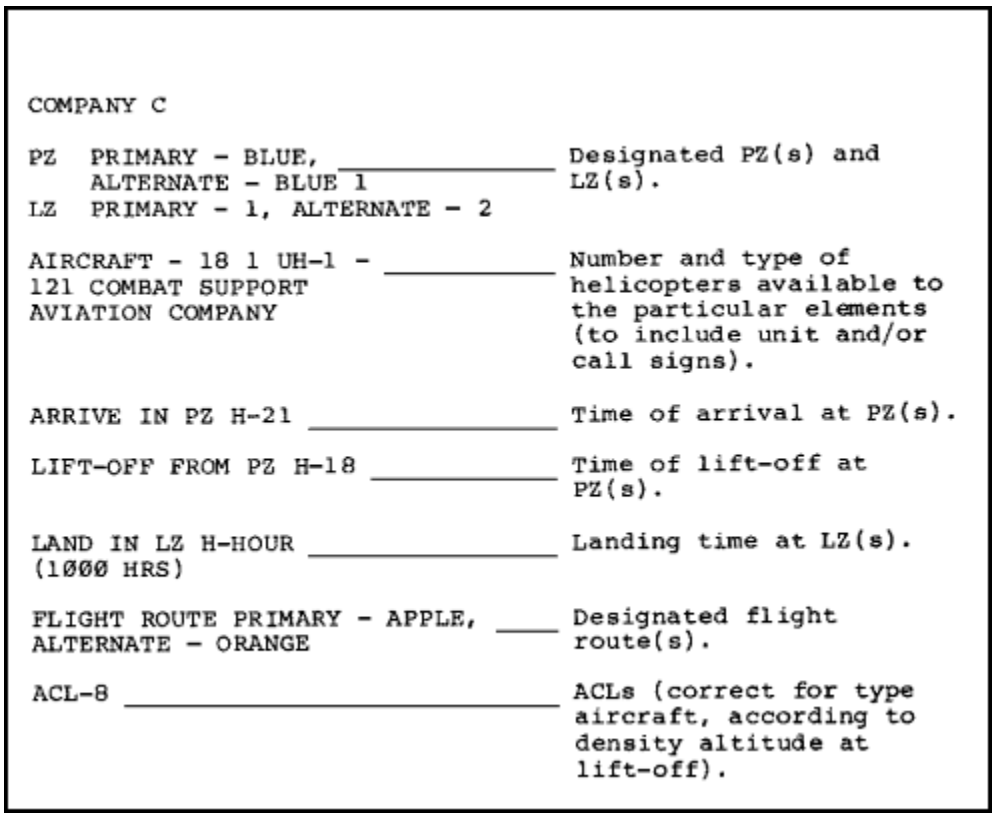

FIGURE 6. EXPEDIENT MOVEMENT TABLE.

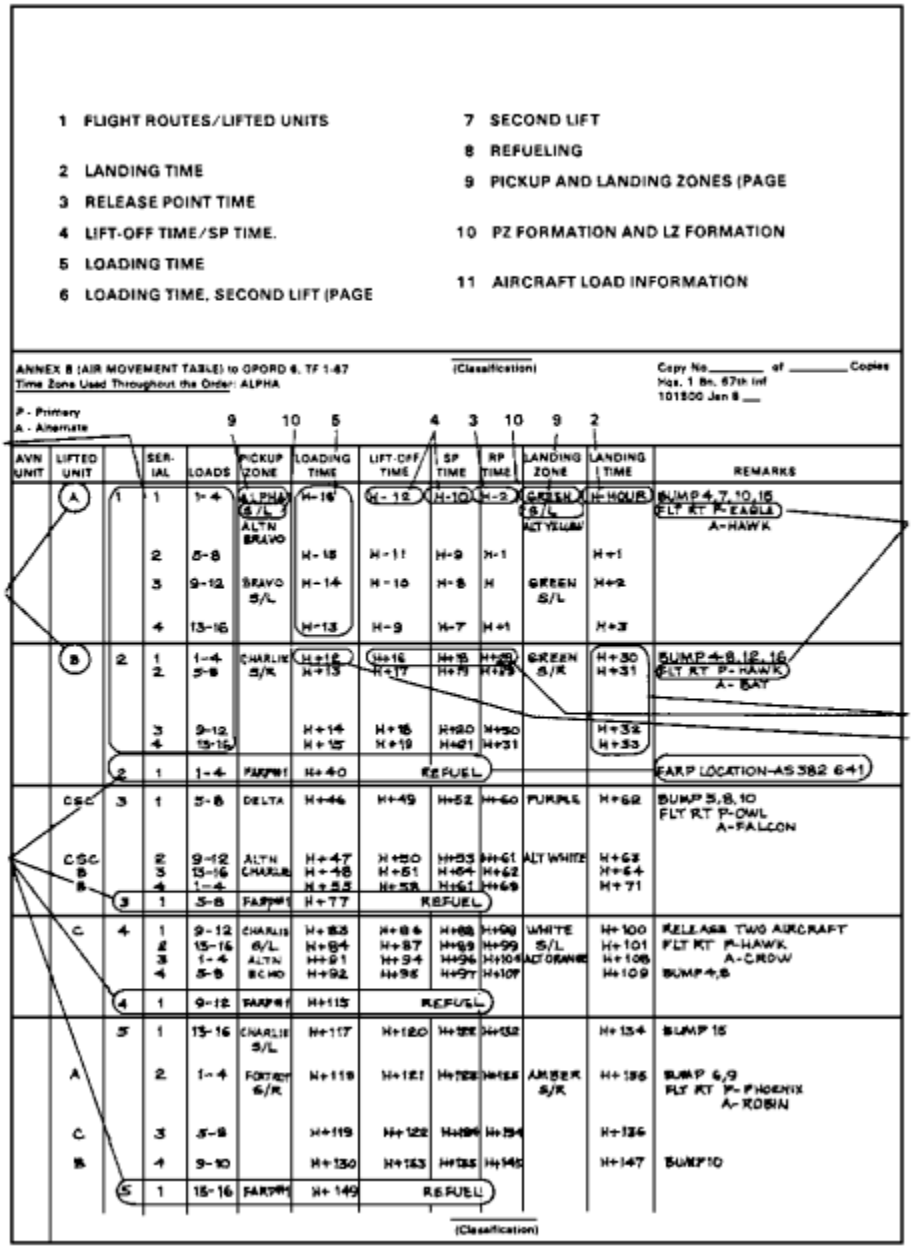

FIGURE 6A. COMPLETED AIR MOVEMENT TABLE.

Certain characteristics guide flight route development.

DEVELOPMENT OF FLIGHT ROUTES

Flight routes are developed based on tactical and technical factors. It may be necessary for a route to pass through an adjacent unit's sector. When that is the case, approval from that unit is obtained and coordination made. Regardless of route direction or location, certain criteria are considered.

Seldom are all characteristics present in any one situation. One or more may have to be omitted. Flight routes -

- Are as short as possible, consistent with other considerations.

- Avoid turns in excess of 45 degrees, when formation flying is required, to facilitate control of the aircraft formation.
- Provide terrain masking to deny exposure to enemy observations, direct fire weapons, and radar acquisition, if possible.
- Provide cover when terrain permits, placing terrain mass and/or vegetation between the enemy and the aircraft.
- Provide for ease of navigation (day or night).
- Avoid masking friendly fires, particularly supporting artillery.
- Avoid known enemy units and air defense positions.
- Avoid overflight of built-up areas.

Depending on how complex the air movement plan and how crowded the airspace, you may need to plan flight corridors.

FLIGHT CORRIDORS

When there is competition for airspace, it may be necessary to modify the flight route(s) and designate one or more flight corridors. The corridor reserves airspace around a flight route for AATF use, and prevents artillery, TAC AIR, and other elements from firing or flying through when it is in use.

Authority to establish a flight corridor is obtained from the brigade and/or division commander(s). Designated flight corridors are coordinated through airspace management channels. This ensures that airspace within corridors is not violated.

The corridor begins as a flight route and is then modified as required. The size of corridors varies. Normally, they extend 200 to 300 meters on either side of the designated flight route and 500 feet above and below the route flight altitude.

Helicopter formations operating at terrain flight (that is, low) altitudes do not require minimum altitude corridor designations. The upper air limit of the corridor may vary and would be specified by the headquarters establishing it.

If it is necessary to restrict the operational area to only those aircraft directly involved in the air assault operation, a restricted area can be established by the airspace management element.

The situation may demand a flight axis rather than a flight corridor.

FLIGHT AXIS

The flight axis is another variation of the flight route. It is a flight route that has width (like the corridor) but does not have airspace reserved to a specific altitude (as does the corridor).

The flight axis permits deviation laterally along the flight route but does not restrict the use of other assets. It gives the AMC a choice in selecting en route formations and freedom to alter direction without coordinating a new flight route.

Another variation on the basic flight route is the expedient flight route.

EXPEDIENT FLIGHT ROUTES

These routes are established with checkpoints. If time is not available to develop and disseminate PZs, LZs, and flight route information, the commander can define an expedient route by reference to checkpoints (see Figure 7).

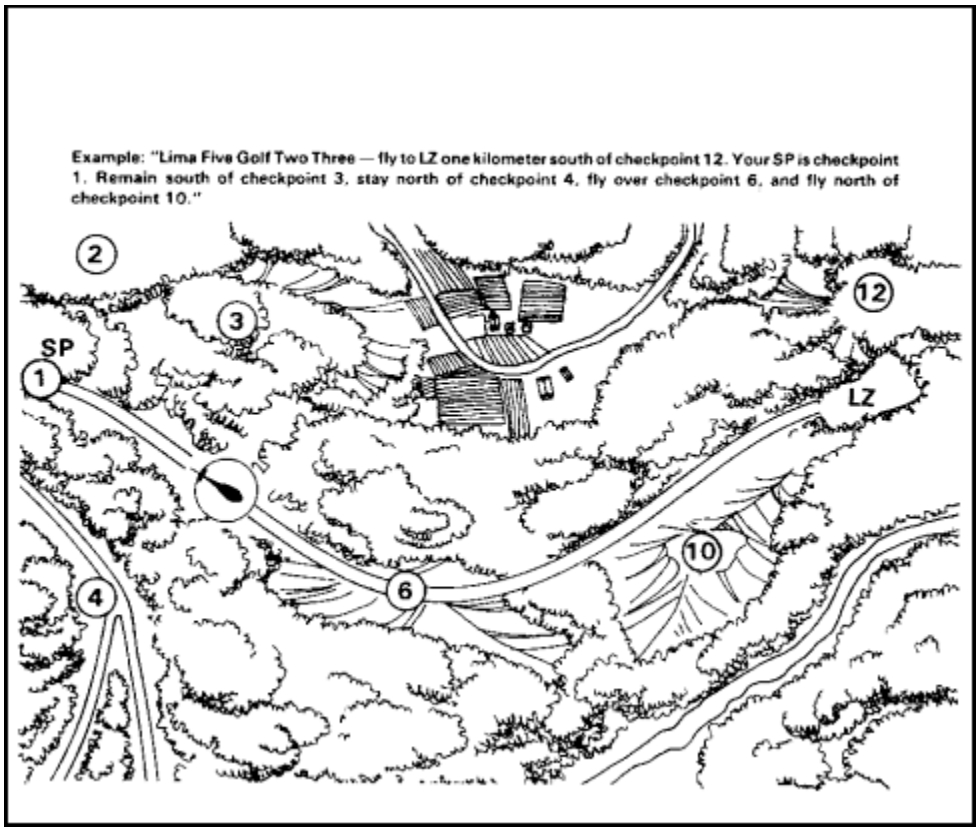

FIGURE 7. EXPEDIENT FLIGHT ROUTE.

Regardless of how routes are designed or designated, all flight routes need some kind of control.

FLIGHT ROUTE CONTROL MEASURES

Control measures assist in navigation and provide control to ensure the AATF arrives in the LZ on time and in sequence.

Air control points (ACPs) designate each point where the flight route changes direction (see Figure 8). They include readily identifiable topographic features or points marked by electronic navigational aids.

A route may have as many ACPs as necessary to control the air movement. The SPs and RPs are also ACPs.

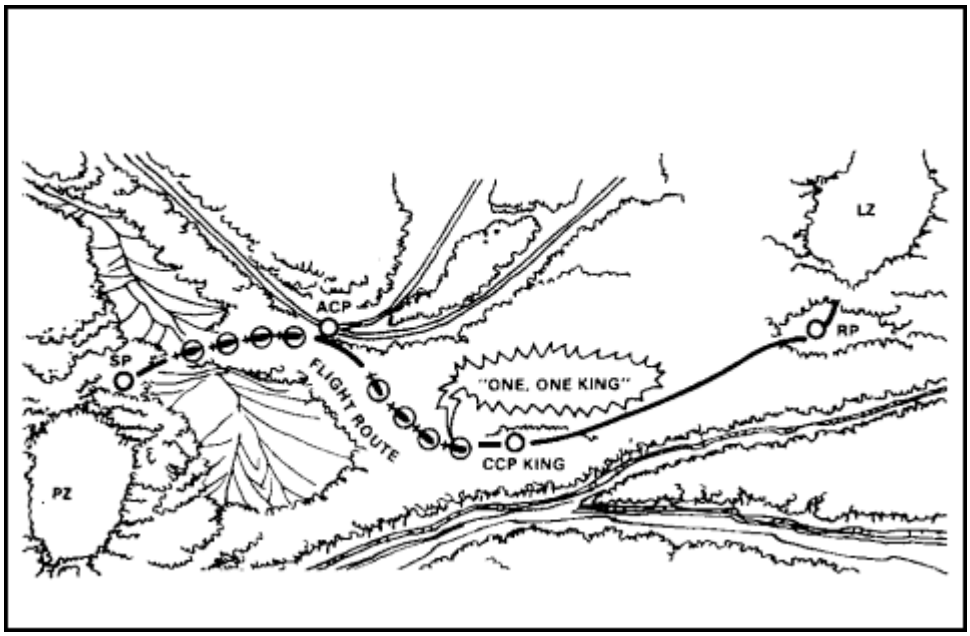

FIGURE 8. EN ROUTE REPORTING.

An ACP may be further designated as a communication checkpoint (CCP). A CCP is a point along the flight route that serial commanders report to the AMC. Radio transmissions are made only when necessary. If a report is required, the transmission is short. This is possible by using codes. For example, the short transmission "one, one, king" could mean that the first serial of Lift 1 is crossing CCP King.

Developing flight routes does not assign aircraft to a route. The planner must still designate routes to be used by the various units.

DESIGNATION OF ROUTES

Once tentative flight routes are identified, they are designated for use by each unit. When large groups of aircraft are used, dispersion is achieved by using multible routes. However, with large serials it is often necessary to use fewer routes, or even a single route, in order to concentrate available supporting fires. Also, the number of alternate and return routes may be limited.

Primary, alternate, and return routes to be used by each subordinate unit are designated. When selecting routes, the following factors are considered:

Interference with ground action. Overflying ground elements may interfere with their supporting fire. Flight routes should be clear of the gun-target line when possible.

Support of landing plan. To reduce vulnerability of the air assault force, flight routes should facilitate rapid approach, landing, and departure from selected LZs.

Enemy ground and air capabilities. Selected flight routes make maximum use of terrain, cover, and concealment to minimize enemy observation and target acquisition.

Available fire support. Flight routes allow support from all available resources.

Available air cover. Flight routes are identified in order to provide air cover for friendly forces en route.

Weather conditions. Flight routes remain usable based on prevailing weather during execution of the air assault operation.

Terrain. Flight routes use terrain to maximum advantage to reduce vulnerability of the aircraft formations.

Time (distance) from PZ to LZ. Flight routes are as short as possible to reduce flying time.

Having determined routes and assigned units to them, you must get the information out to the units and pilots you have assigned.

DISSEMINATION OF ROUTE INFORMATION

Maps or overlays containing flight route information are prepared at AATF headquarters and disseminated to subordinate and support units. (Overlays are often used.)

Flight routes and corridors are designated by a letter, number, or word (see Figure 9).

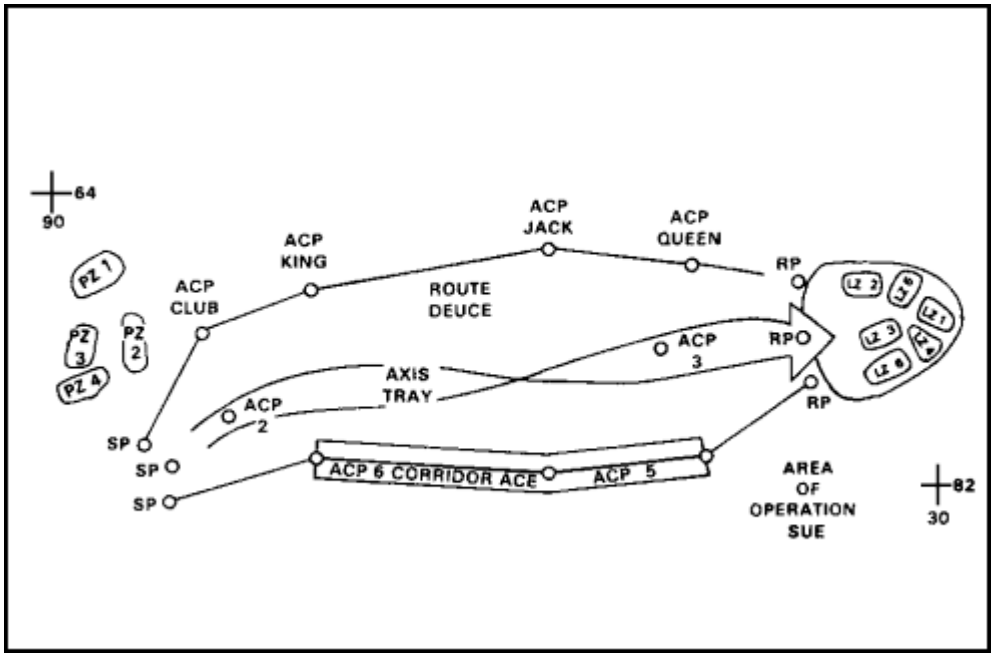

FIGURE 9. DEPICTING FLIGHT ROUTES ON OVERLAY.

How the aircraft get from PZ to LZ--the en route formation--is dictated by a number of factors.

EN ROUTE FORMATIONS

The flight's formation is dictated by the terrain, enemy situation, and the degree of control required. Regardless of the specific formation, aircraft are staggered and the distance between them varies according to the terrain being crossed. The AMC and/or flight leader selects the en route formation. The aircraft land in the formation specified by the air movement table.

Air Assault Formations Used

Heavy left or right. This requires a relatively long, wide landing area. It presents difficulty in pre-positioning loads. Also, it restricts suppressive fire by inboard gunners and provides firepower to the front and the flanks. (See Figure 10)

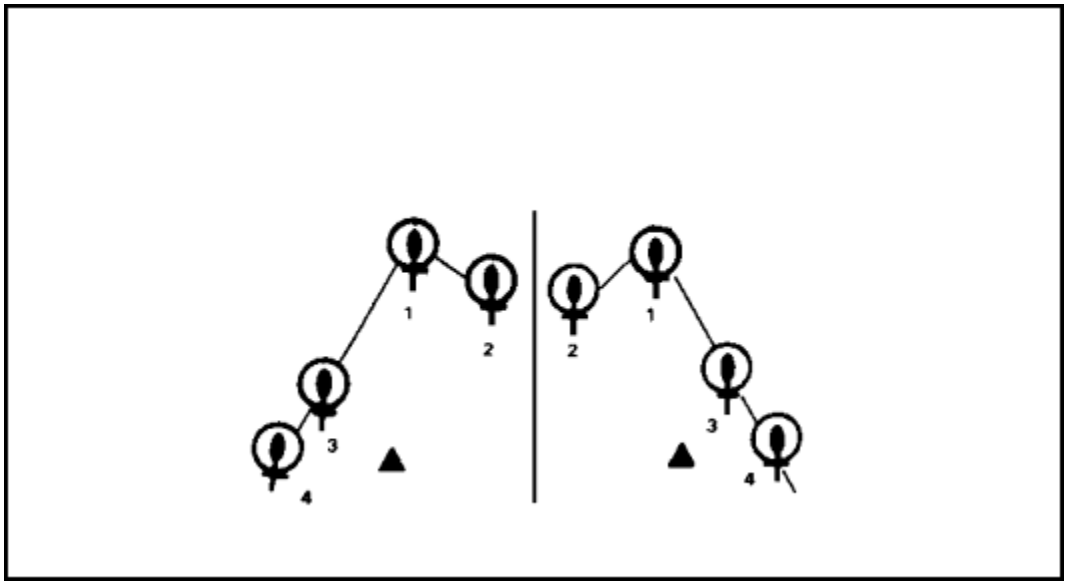

FIGURE 10. HEAVY LEFT OR RIGHT.

Diamond. This formation allows rapid deployment for all-round security. It requires relatively small landing areas. The formation presents some difficulty in prepositioning loads and restricts suppressive fire of inboard gunners. (See Figure 11)

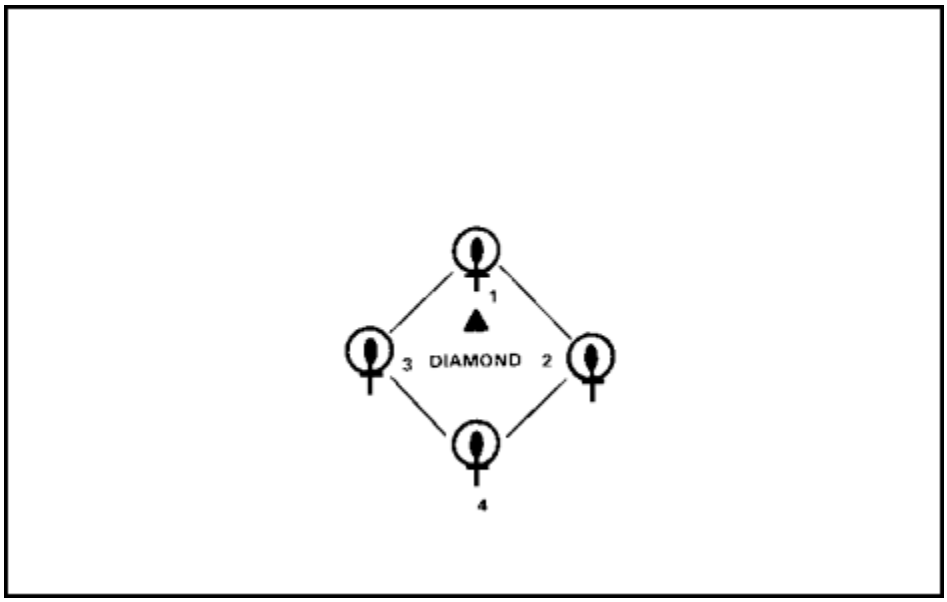

FIGURE 11. DIAMOND FORMATION.

Vee. It requires a relatively small landing area. Forces to the front are deployed rapidly. Suppressive fire of inboard gunners is restricted. There are difficulties in pre-positioning loads. (See Figure 12)

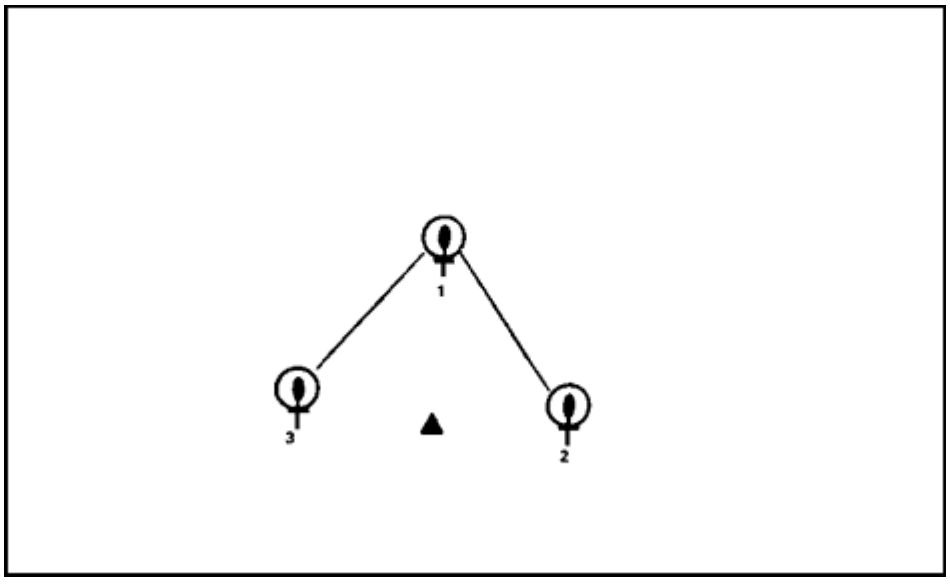

FIGURE 12. VEE FORMATION.

Echelon left or right. This type formation requires a relatively long, wide landing area, and presents some difficulty in pre-positioning loads. The formation allows rapid deployment of forces to the flank. Suppressive fire by gunners is unrestricted. (See Figure 13)

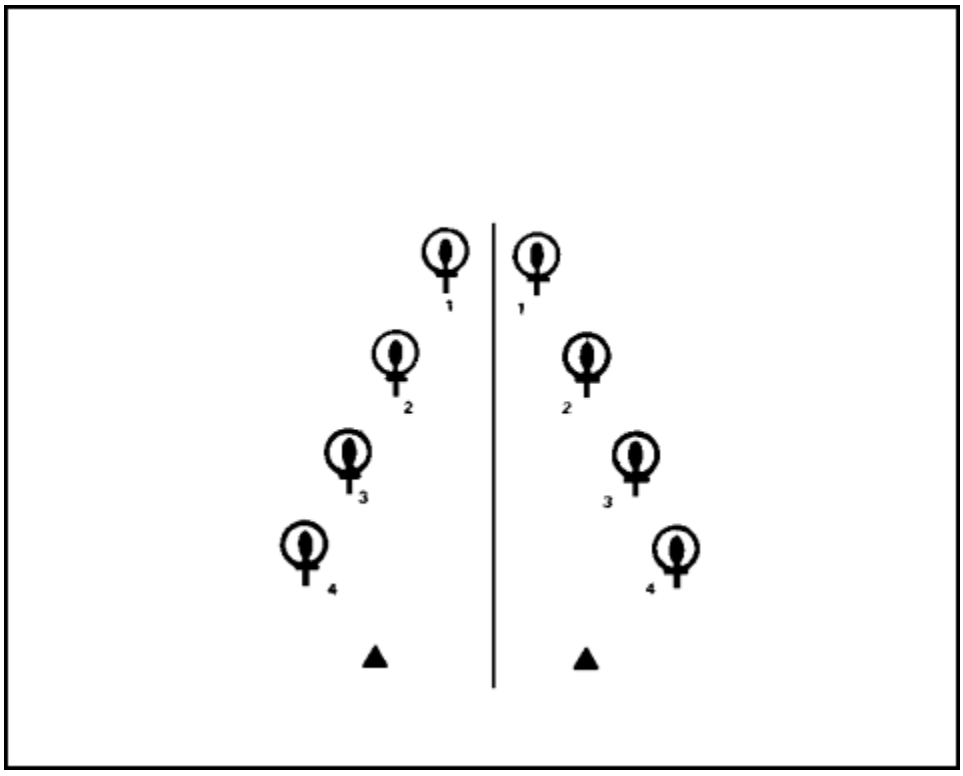

FIGURE 13. ECHELON LEFT OR RIGHT.

Trail formation. It requires a relatively small landing area and allows rapid deployment of forces to the flank. The formation simplifies pre-positioning loads and allows unrestricted suppressive fires by gunners (Figure 14)

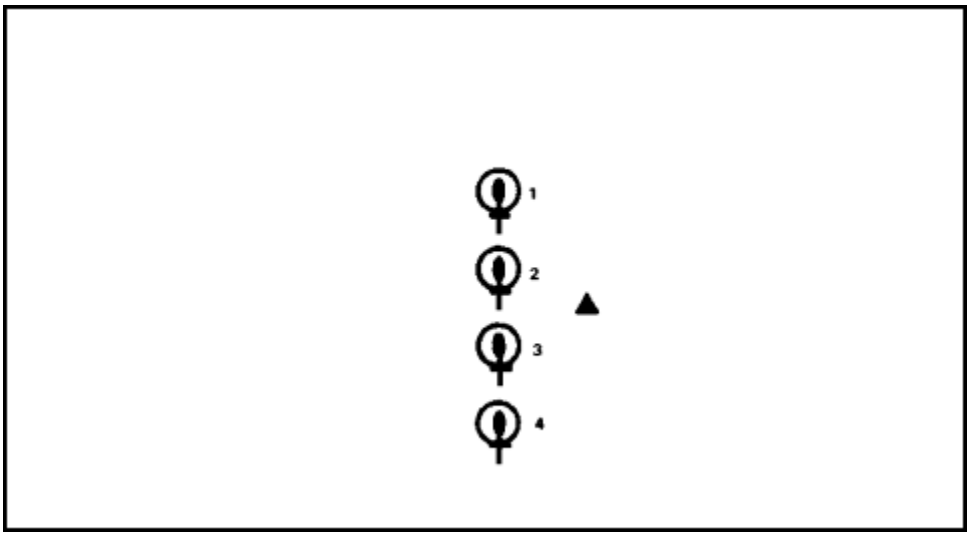

FIGURE 14. TRAIL FORMATION.

Staggered trail left or right. It requires a relatively long, wide landing area; simplifies pre-positioning loads; allows rapid deployment for all-round security. Gunners' suppressive fire is restricted somewhat. (See Figure 15)

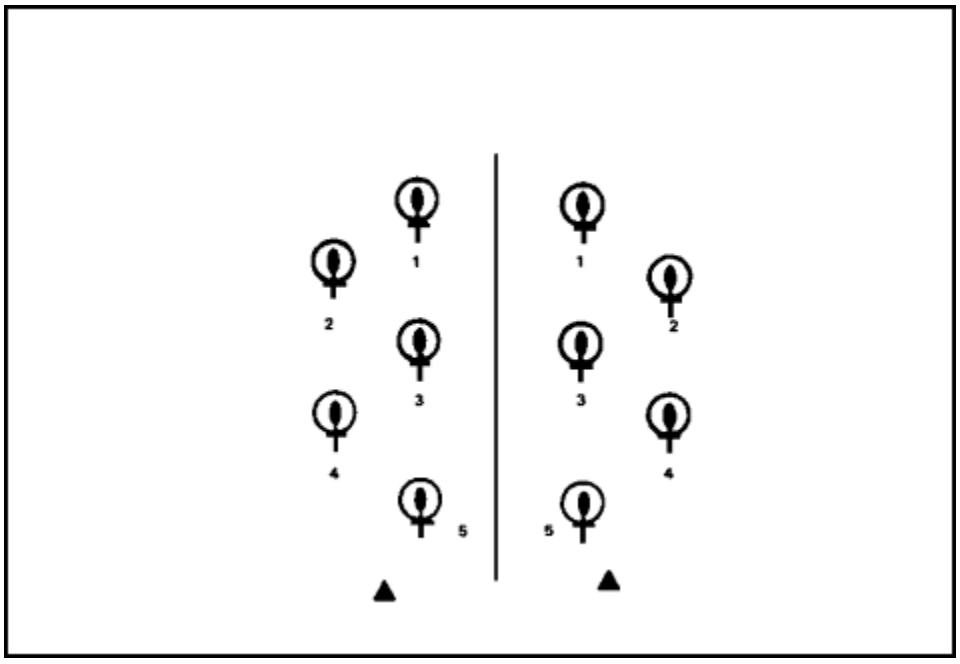

FIGURE 15. STAGGERED TRAIL LEFT OR RIGHT.

Battle Drill

In executing an air assault operation successfully, air assault battle drill must be performed. The first step is to ensure that the aircraft is loaded so that dismounting soldiers react promptly and contribute to mission accomplishment. Individual aircraft are always loaded in the same manner regardless of the formation used (Figure 16); dismounting in the LZ is the reverse of loading (Figure 17).

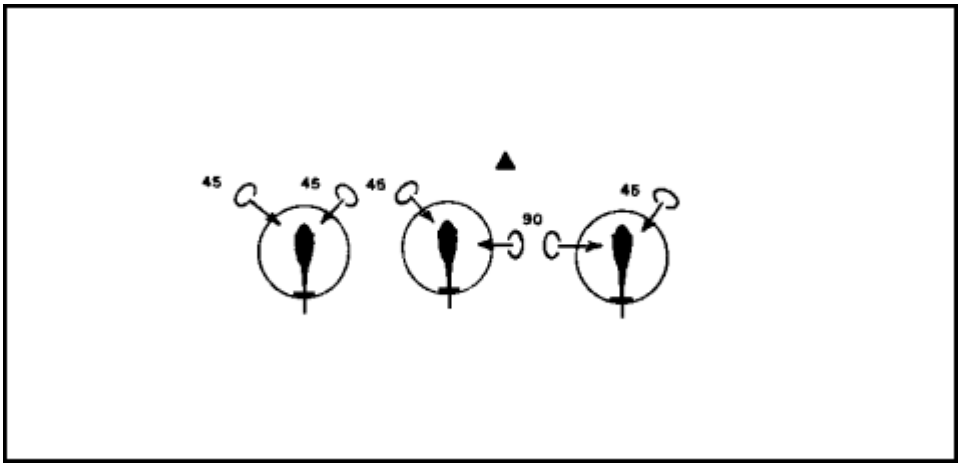

FIGURE 16. LOADING INDIVIDUAL AIRCRAFT.

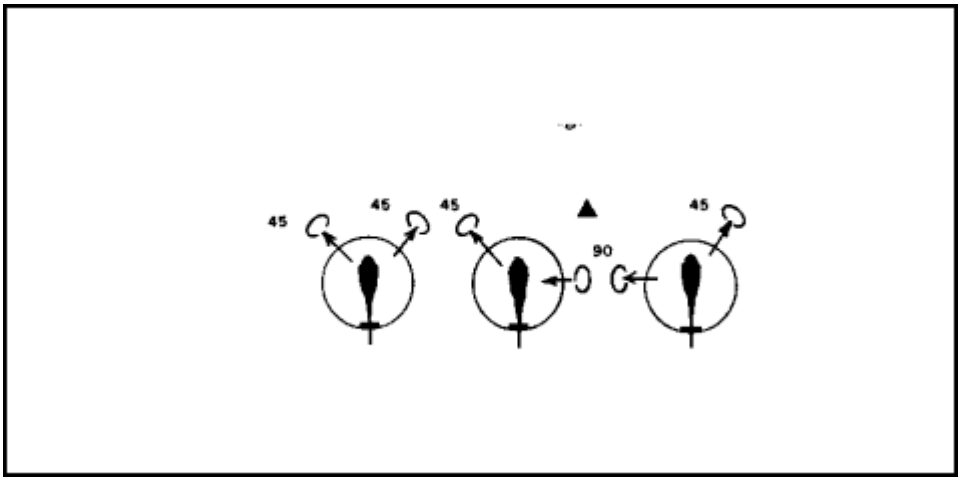

FIGURE 17. DISMOUNTING INDIVIDUAL AIRCRAFT.

When the aircraft lands on a moderate slope, the loading and unloading method is altered. All-round security is attained in both the PZ and LZ. The need for complicated procedures is reduced by keeping the positions for men and equipment the same. On the LZ, this facilitates use of the bounding overwatch method of movement. This movement may be initiated in any direction. From the initial bounding overwatch formation, transition to traveling overwatch is made easily. (See Figure 18)

NOTE: Broken lines indicate movement by bounding overwatch after departure of aircraft.

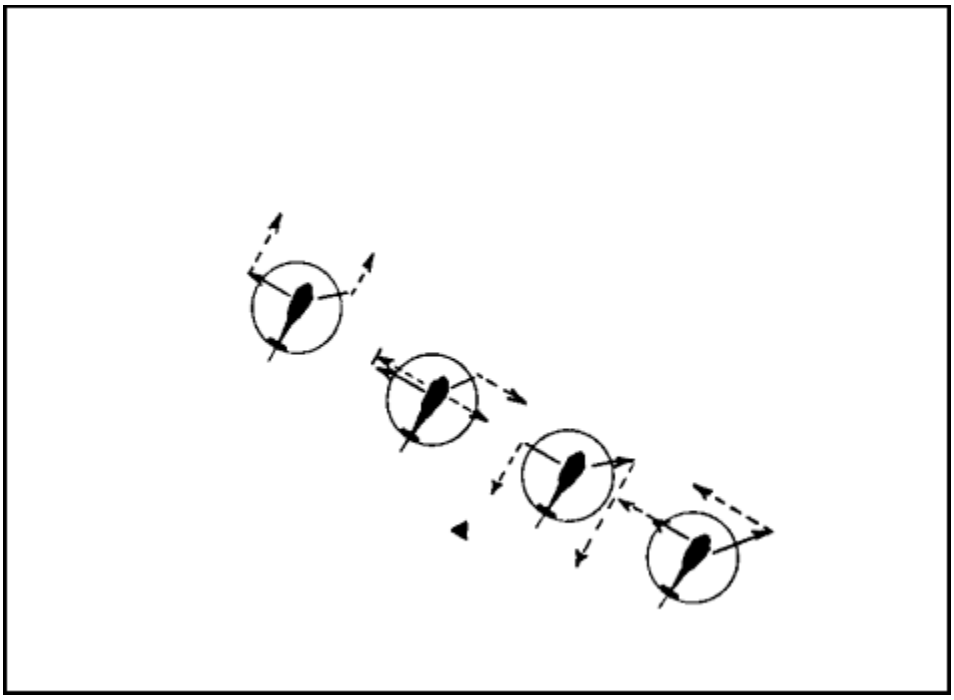

FIGURE 18. MOVEMENT OF BOUNDING OVERWATCH, DEPARTURE OF AIRCRAFT.

Dismounting. After the squad is dismounted, the bounding overwatch formation is used for movement (Figure 19). The squad is organized to fit an eight-man ACL. If the CH-60 Black Hawk is used, the

remaining squad members can be included in the formation. If enemy contact is not expected, the squad uses the traveling overwatch technique (Figure 20).

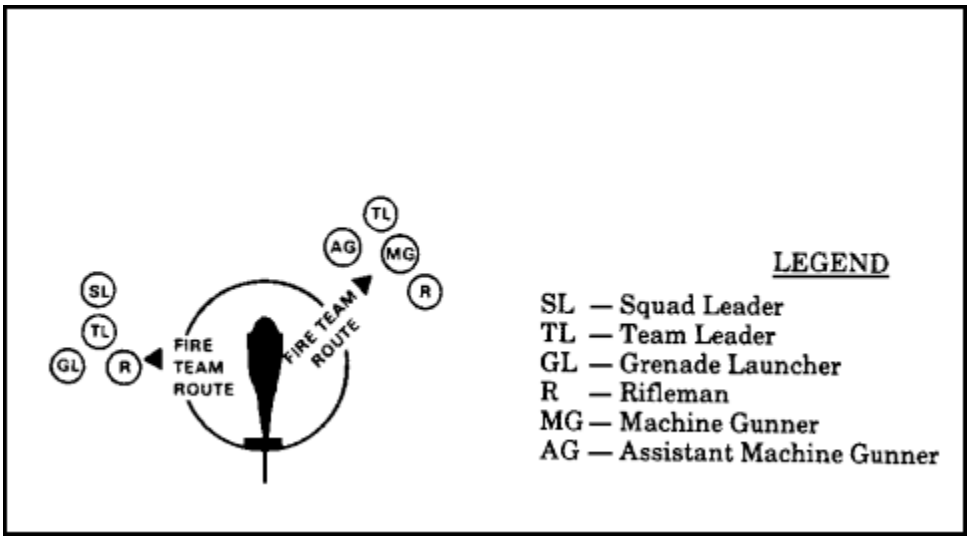

FIGURE 19. DISMOUNTED BOUNDING OVERWATCH.

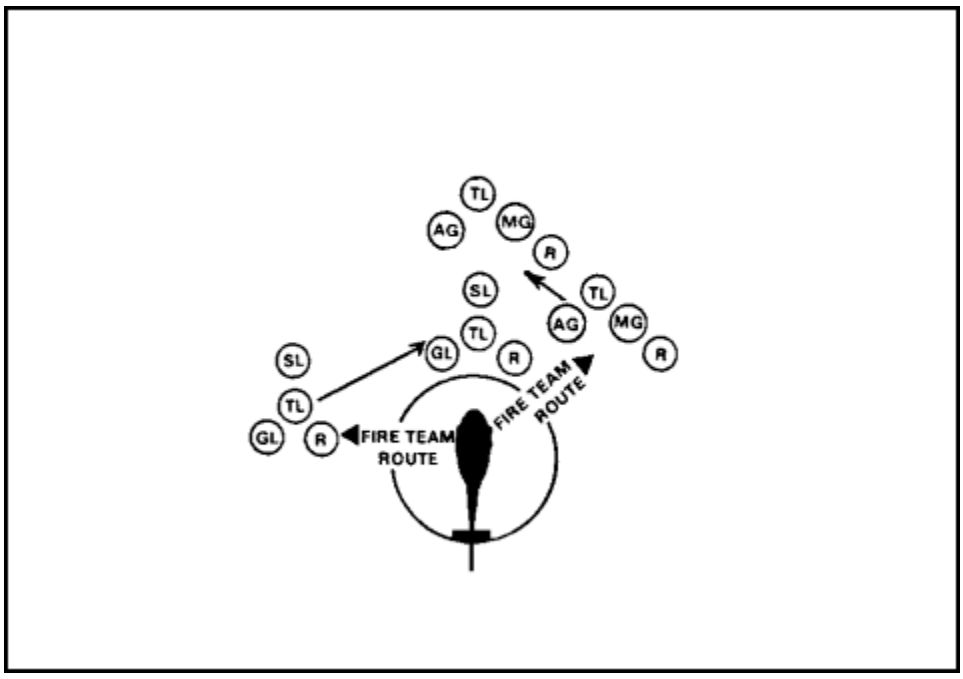

FIGURE 20. DISMOUNTED TRAVELING OVERWATCH.

Movement to a line or assault formation can be executed from the overwatch position. Additional squad members can be carried on the Black Hawk (Figure 21). See the following figures: the heavy left, heavy right formation (Figure 22); the echelon left, echelon right formation (Figure 23); the vee formation (Figure 24); the diamond formation (Figure 25); the trail formation (Figure 26); and the staggered trail left, staggered trail right formation (Figure 27).

NOTE: Broken lines indicate movement after aircraft depart.

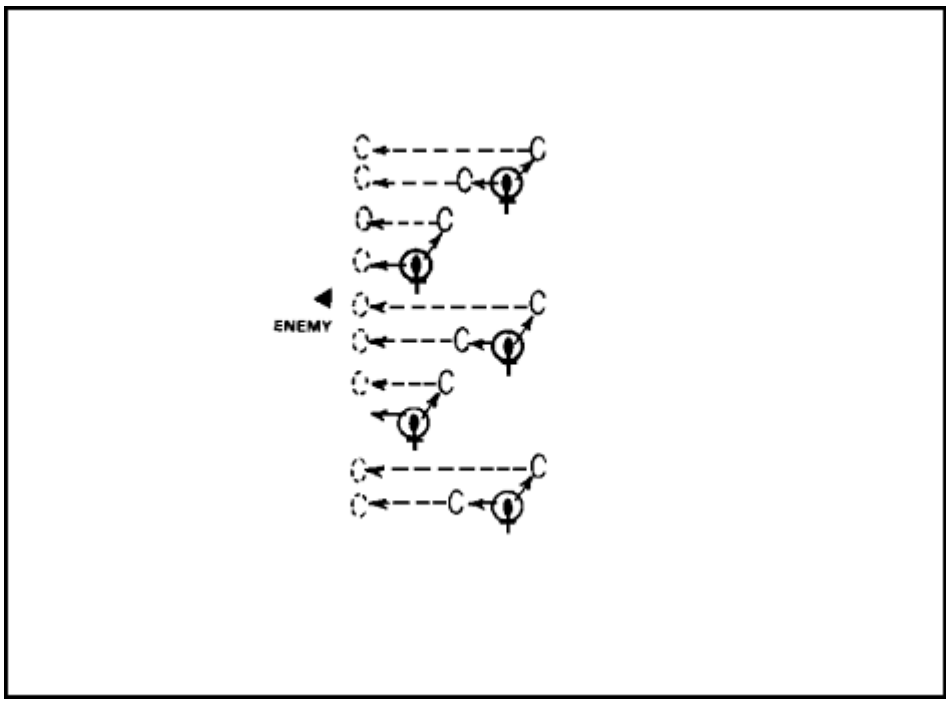

FIGURE 21. MOVEMENT TO LINE FORMATION.

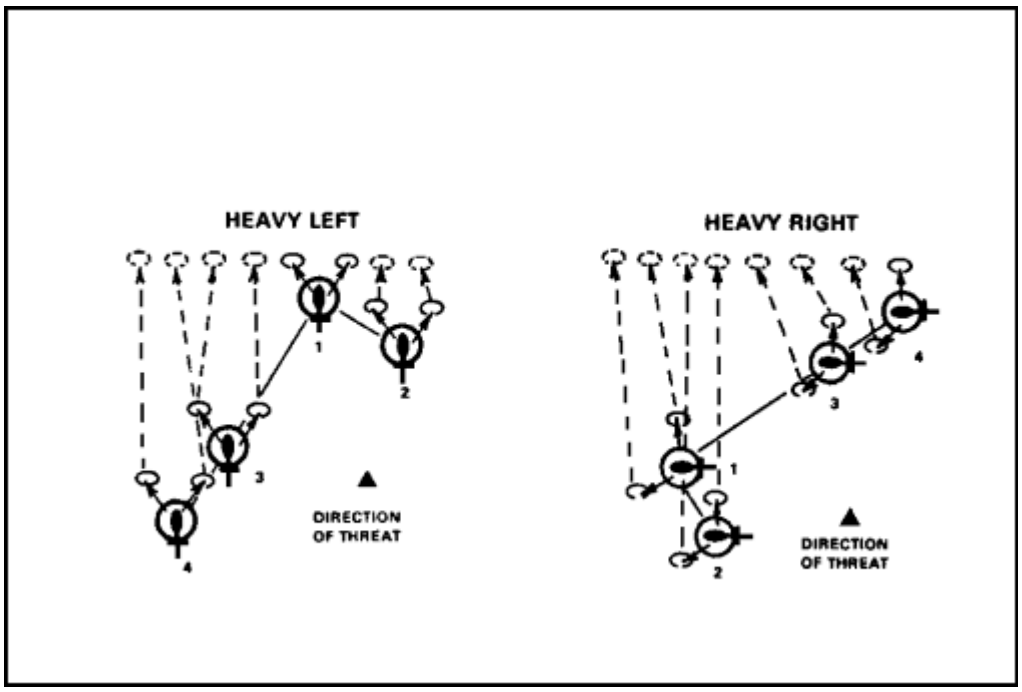

FIGURE 22. MOVEMENT TO LINE FROM HEAVY LEFT, HEAVY RIGHT FORMATION.

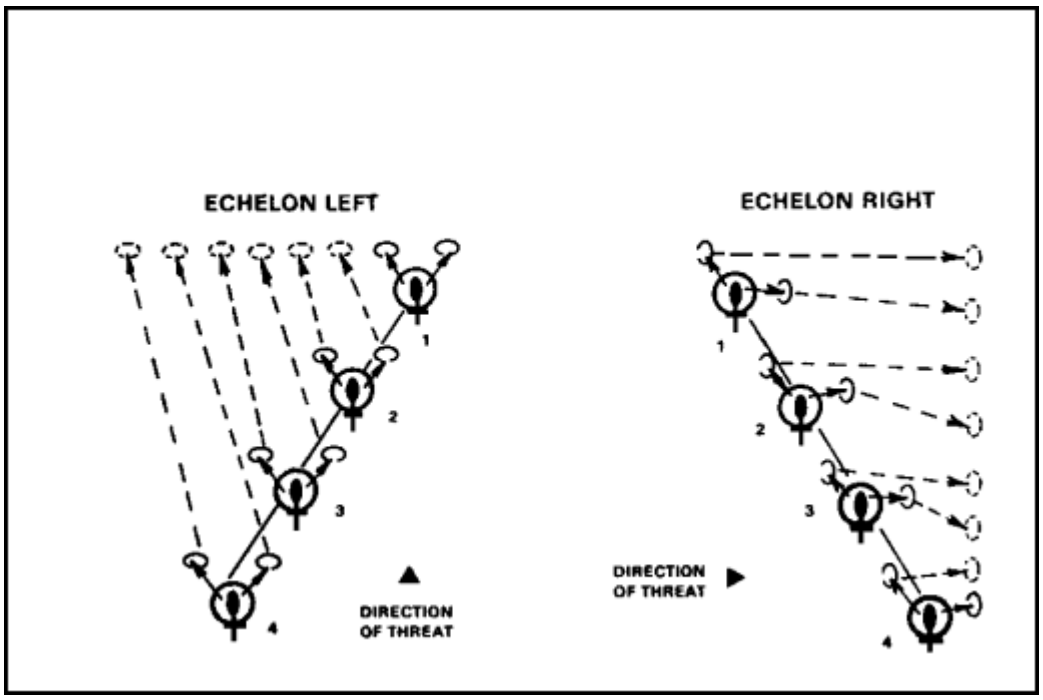

FIGURE 23. MOVEMENT TO LINE FROM ECHELON LEFT, ECHELON RIGHT FORMATION.

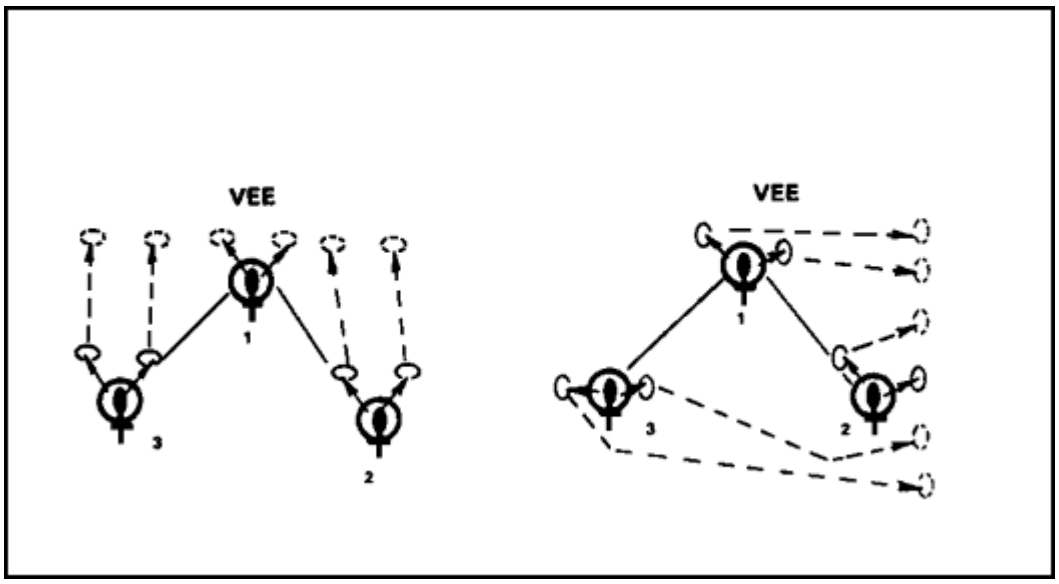

FIGURE 24. MOVEMENT TO LINE FROM VEE FORMATION.

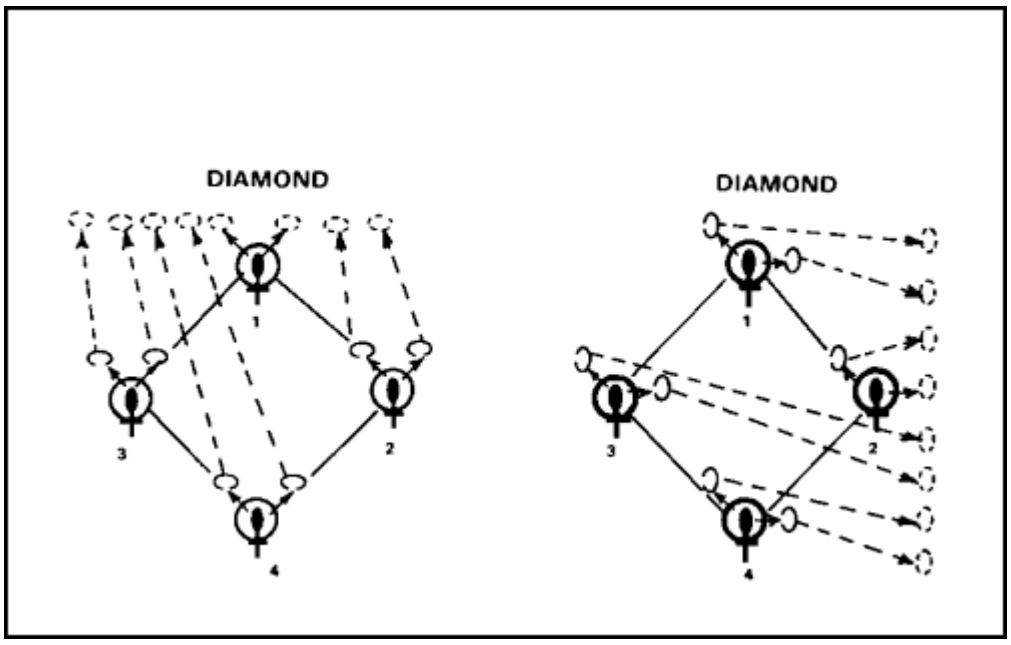

FIGURE 25. MOVEMENT TO LINE FROM DIAMOND FORMATION.

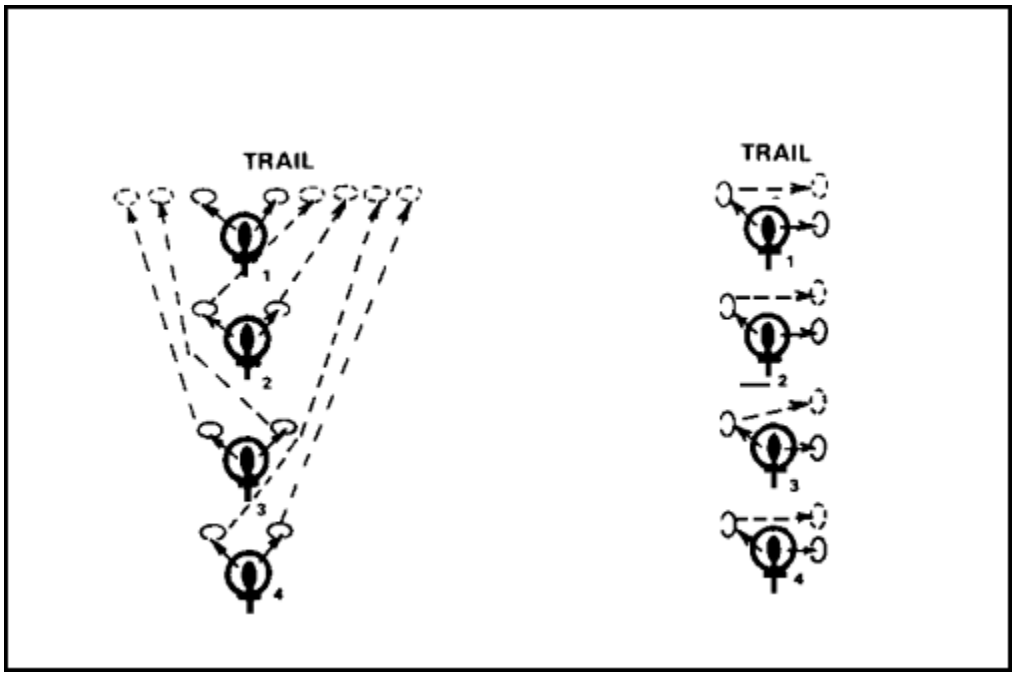

FIGURE 26. MOVEMENT TO LINE FROM TRAIL FORMATION.

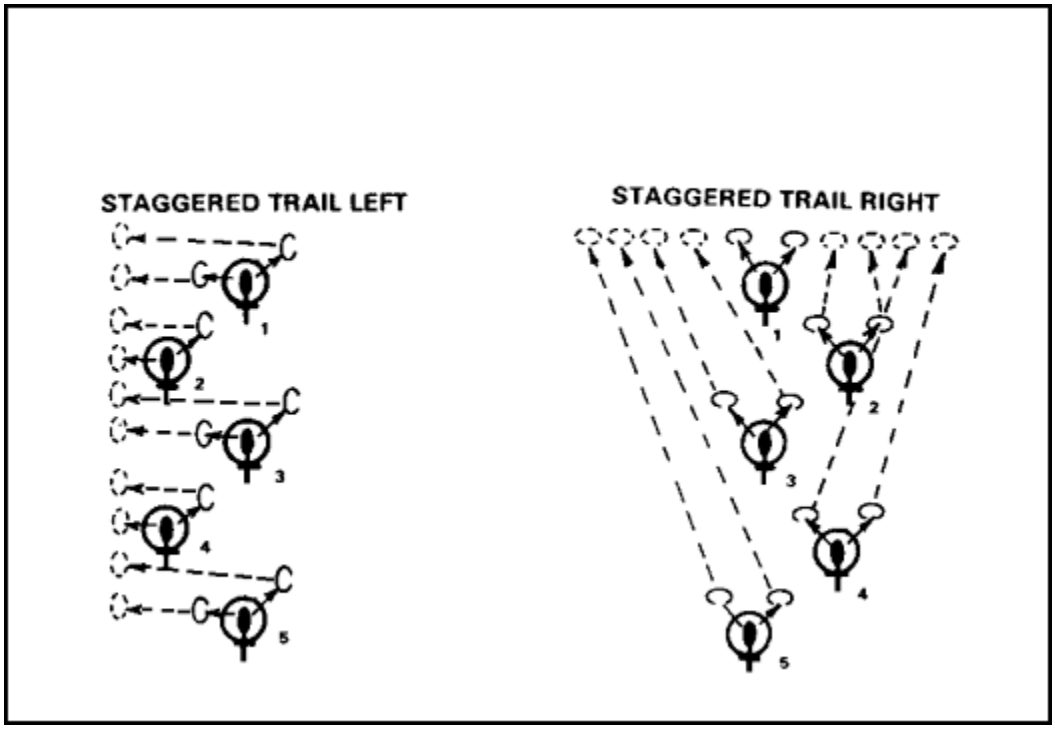

FIGURE 27. MOVEMENT TO LINE FROM STAGGERED TRAIL LEFT, STAGGERED TRAIL RIGHT FORMATION.

There are three basic ways to get from place to place during an air assault operation.

TERRAIN FLIGHT MODES

A specific en route fight altitude is not designated. Pilots may use one of three terrain flight modes as dictated by the mission and the threat (see Figure 28).

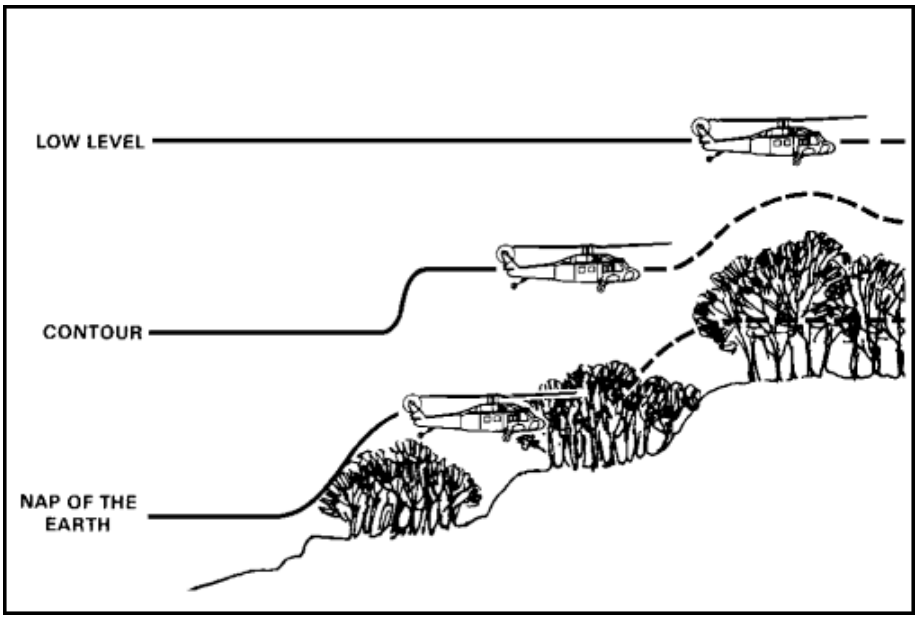

FIGURE 28. TERRAIN FLYING.

The three modes are nap-of-the-earth flight, contour flight, and low-level flight.

Nap-of-the-Earth Flight

Nap-of-the-earth (NOE) flight is flown at varying airspeeds and altitudes as close to the earth's surface as possible while following the contours of the earth. It is a weaving flight path that remains oriented along the general axis of movement and takes advantage of terrain masking.

Contour Flight

This is flown at low altitude, conforming generally to the contours of the terrain. The flight is characterized by varying altitudes and airspeed.

Low-Level Flight

This is flown at low altitude, with constant heading, airspeed, and altitude to facilitate speed and ease of movement while minimizing detection. This mode is normally used only in rear areas.

Factors Affecting Flight Altitude

There are at least seven factors that determine altitude. Among them are -

Enemy. The greater the enemy air defense threat, the lower the flight altitude.

Terrain. Aircraft must clear all terrain obstacles and still reduce exposure to enemy air defense weapons and observation.

Navigation. It is usually easier to navigate at higher altitudes, but the risk of detection by the enemy is greater.

Weather. Ground fog or haze requires higher altitudes, whereas a low ceiling requires lower altitudes.

Flight distance. If the distance is short, the flight does not take time to climb to a higher altitude.

Need for surprise. Surprise is more likely when using low altitude.

Pilot fatigue. Terrain flying is more fatiguing for aircrews.

Fire support plays as important role in the air movement plan.

SUPPORTING FIRES ALONG THE FLIGHT ROUTE

Fires along the flight route are planned to suppress known or suspected enemy positions. These fires should be intense and of short duration. Multiple target engagement techniques should be used (groups, series).

Fire plans cover the PZs, flight routes, and LZs. Fire support plans include suppression of enemy air defense systems and smoke to protect formations from enemy detection. This requires aggressive fire planning by the FSO and direct coordination with FA and mortar FDCs and other FSEs.

All available fire support is used to suppress and/or destroy enemy weapons including TAC AIR, artillery, and attack helicopters.

Support may consist of smoke, chaff (air-dropped shredded aluminum foil to foul radar), or other countermeasures for suppressing or confusing enemy air defense systems.

On-call fires are planned along the flight route to ensure rapid adjustment on targets of opportunity.

During night operations, the use of illumination fire requires detailed planning. Illumination can interfere with night vision goggles and cause unsafe conditions.

Timing is a critical element in any air movement plan.

AIR MOVEMENT TIMING

A successful air assault operation is a sequence of actions carefully planned and precisely executed.

The basis for timing is the time when the first aircraft in the first lift of the operation is to touch down on the LZ. It is referred to as H-hour. All times in air assault operations are referenced from H-hour (landing time column, air movement table). The H-hour in air assault operations is equivalent to the attack time in a mission order. If delays are encountered due to weather or aircraft delays, the commander announces a new H-hour.

Normal distance from RP to LZ is 3 to 5 kilometers. Planning time for navigating this distance is approximately two minutes, depending upon airspeed. In order for the first aircraft to land in the LZ at H-hour, it must reach the RP and H-2 minutes (RP time column, air movement table).

The air movement table requires time for detailed planning. For large operations, an LO from the supporting aviation element is required.

The importance of an air movement table should not be underemphasized. As stated previously, Cý procedures should be planned to allow continued execution despite loss of radio communications. If the AMC and lift flight leaders have air movement tables in their possession, they can continue the mission without radio communication.

The following example explains how to compute the time required to cover the distance from the SP to the RP. These times are computed for the entire length of the flight route from the SP to the RP. The length of each of the flight routes is measured so that en route times can be computed. Round up to the next higher whole number.

Flight time is computed using this formula:

$$T = \frac{D \times 60}{S \times 1.84},$$ where T = time in minutes, D = distance in kilometers (km), S = ground speed in knots (AMC provides this by computing airspeed and converting it to ground speed)

The figure 60 used in the formula converts hours to minutes. The figure 1.84 converts knots to kilometers per hour. A fraction of a minute is rounded to the next higher minute.

The distance of the flight route between the SP and RP is 14 kilometers average ground speed is 60 knots.

$$T = \frac{14 \times 60}{60 \times 1.84}, = \frac{840}{110.4}, = 7.6 \text{ minutes}$$

Rounded up, the time is eight minutes.

Having determined the flight time, you can determine the liftoff time and the start point time.

LIFTOFF TIME, START POINT TIME

Liftoff time must be determined first in order to meet the LZ time. The total flight route time is determined by adding the time to fly from the SP to the RP to the LZ. In the preceding example, flight route time was determined to be eight minutes. The flight time from the RP to the LZ is two minutes. In this case, SP time would be H-10.

RP time = H-2 (2 minutes for RP to LZ).
SP time = H-10 (8 minutes flight route time plus 2 minutes from RP to LZ).

To determine the liftoff time, add the time between PZ and SP. Continuing the example, if the time between the PZ and SP is two minutes,

RP time = H-2.
SP time = H-10.
Liftoff time = H-12 (this includes 2 minutes from PZ to SP).

All times (liftoff, SP, and landing) are recorded in the proper columns of the air movement table.

Your air movement table needs to show the time required to load the aircraft.

LOADING TIME

Loading time is the time required before liftoff to load the aircraft. Time to load is normally dependent on prior training, equipment to be carried, and light conditions. Night operations require more loading time. Once loading time is determined, add it to the previously computed times.

If a unit requires four minutes to load to meet the liftoff time of H-12, it begins loading no later than H-16 minutes (loading time and liftoff time columns, air movement table).

Slingloading also requires additional time that must be calculated into the plan. The use of slingloads may also reduce the en route airspeed.

The aviation and ground elements each begin movement to the PZ to start loading at the prescribed time.

With the air movement time schedule completed for the initial elements, the air movement table is completed by building on the initial times.

If a second lift is planned, its loading time must be factored into the plan as well.

LOADING TIME, SECOND LIFT

The first lift is planned working back from H-hour. Planning for the second lift is forward from H-hour since the en route times are established. However, before annotating the air movement time for the second element, the time required for the aircraft to return from the LZ to the PZ (along the return route) is computed. This is done using the same method used to compute initial flight time.

For example, if it is two minutes flight time from the PZ to the SP, two minutes from RP to LZ and eight minutes en route, then once the aircraft have unloaded, it takes 12 minutes to return to the PZ (lift, serial, loads, and loading time columns, air movement table).

With this information, you can time out the second lift.

SECOND LIFT

If it takes four minutes to load the second lift, the liftoff time is recorded as H+16 minutes. Subsequently, if it takes two minutes to get from PZ to SP, SP time is H+18 minutes. If the flight requires 10 minutes to get from SP to RP, RP time is H+28 minutes. Once again, allow two minutes for transition from RP to LZ: the landing time for the second element on its LZ is H+30 minutes. Subsequent times are all computed in the same manner (landing time column, air movement table).

The air movement plan must take into consideration refueling and rearming the aircraft involved.

PLANNING FOR REFUELING

An accurate table must also contain the times involved in aircraft refueling.

Refueling is planned so that a flight completes refueling before the serial to be refueled last gets critically low on fuel. If only a portion of the flight can be refueled at the FARP, the first serial might have to refuel as much as an hour before it needs refueling. The other serials continue the lift operation until they are due to refuel. The plan should allow a smooth, continuous rotation of aircraft into and out of the FARP (see Figure 29).

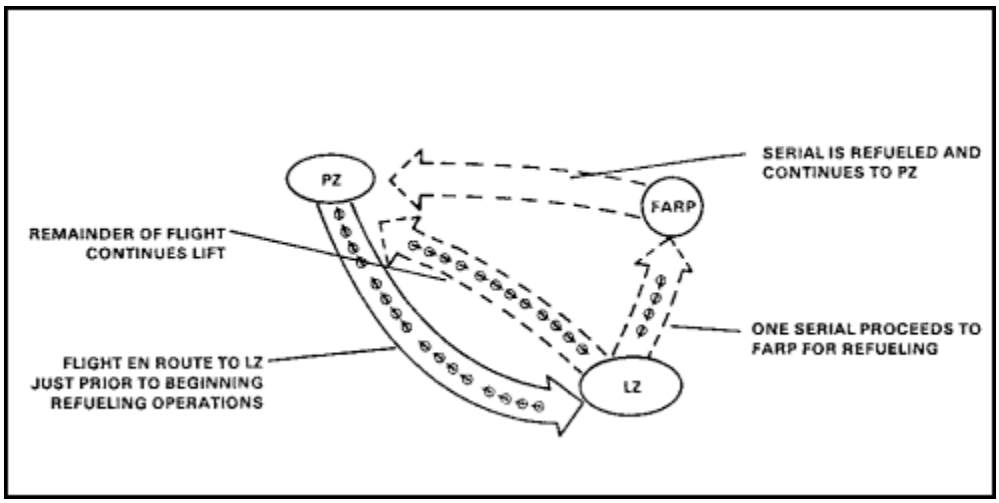

FIGURE 29. SEQUENCING SERIALS INTO THE FARP.

The number of aircraft that can refuel at one time is divided into the number of aircraft in the lift. The result is the number of separate trips to the FARP to refuel the entire lift one time.

The result is multiplied by the time required for the aircraft to refuel. The answer gives the total time required to refuel one time. For example, if four serials require 15 minutes each to refuel, it takes one hour to refuel the entire lift. (This time includes time for repositioning to the PZ.)

This figure is subtracted from the available flying time to determine at what point in the mission the refueling process must begin.

The physical planning for refueling begins when the aircraft arrive in the PZ for loading. Once the plans are developed, refueling becomes a part of the table.

Learning Event 4:
IDENTIFY THE CHARACTERISTICS AND PLANNING CONSIDERATIONS FOR A LOADING PLAN

Once you know which aircraft are going where at what time, you must plan to load the troops, equipment, and supplies on the proper aircraft. This is the loading plan.

GENERAL

The loading plan is based on the air movement plan. It ensures that troops, equipment, and supplies are loaded on the correct aircraft.

Unit integrity is maintained when aircraft loads are planned. However, assault forces and equipment may be cross-loaded so that command and control assets, all types of combat power, and a mix of weapons arrive at the LZ ready to fight.

Aircraft loads are also placed in priority to establish a bump plan. A bump plan ensures that essential troops and equipment are loaded ahead of less critical loads in case of aircraft breakdown or other problems.

Below brigade level, loading plans are established by SOPs. In any case, planning must cover the organization and operation of the PZ including load positions, day and night markings, and communications. The loading plan is most important when mixing internal and external loads and/or when mixing aircraft types (lift and medium helicopters).

Like everything else in an air assault operation plan, loading must be carefully coordinated.

COORDINATION WITH AIR MISSION CONTROL

Loading plans are carefully coordinated with the AMC or the aviation LO. Copies of the loading plan should be distributed to the aviation LO, command and control elements, AMC, and the PZ control officer.

For battalion or larger air assault operations, a written plan may be required to -

- Control movement of troops, supplies, and equipment to and about the PZ.
- Designate unit loading sites.
- Control timing for arrival, loading, and departing of aircraft.

The requirement for detailed, written plans can be reduced by having adequate unit SOPs covering PZ operations and loading plans. Regardless of SOP adequacy, the loading phase should receive command attention to ensure that it goes smoothly. A well-planned and properly executed loading operation is imperative to mission success.

PICKUP ZONE SELECTION

Pickup zone identification is the first step in the loading plan development. Alternate PZs are identified at the same time as primary PZs. The goal of PZ identification is to locate suitable areas to accommodate the lift aircraft.

The specifications, such as degree of slope, wind speeds, and distance between aircraft, used in this lesson to identify and select PZs, LZs, and flight routes, are planning guides for the ground unit. They may be adjusted by the AMC based on his evaluation of his unit's level of training.

Extraction under pressure is also a function of successful PZ selection. Selected PZs must facilitate delivery of suppressive fires and continuous security of elements to be extracted and their helicopters.

Figures 30 and 31show the technical factors that must be considered in selecting PZs.

Once available PZs are identified, the AATFC and his S3 select and assign PZs to be used by each unit. Pickup zone criteria include-

SIZE

PZ and LZ size requirements depend on type and number of aircraft and are based on minimum acceptable distances between aircraft. Each aircraft should be provided a circular landing point separated from other aircraft and free of obstacles. Minimum recommended landing point sizes (diameter of circle in meters) are:

(1) Observation helicopters--25 meters.

(2) UH-1, AH-1--35 meters.

(3) UH-60, AH-64--50 meters.

(4) Cargo helicopters--80 meters.

SURFACE CONDITIONS

Surface conditions in the PZ and LZ should not conceal the touchdown point or create hazards to landing (e.g., sand, blowing dust, snow). The surface of the zone should be free of obstacles that could damage landing aircraft (no tree stumps, large rocks). It must be firm enough to support the traffic. Drainage should be adequate for rainfall runoff. If the surface is contaminated (chemical or radiological) to an unacceptable degree, it may preclude use of the area. If part of an area is unsatisfactory for any reason, that part is not used.

GROUND SLOPE — LANDING

As a guide: if the ground slope is 0 to 6 percent, land upslope; if the slope is 7 to 15 percent, land sideslope; over 15 percent, no touchdown (aircraft may hover to drop off or pick up personnel and/or equipment).

IF SLOPE IS 0% - 6%, LAND UPSLOPE.

IF SLOPE IS 7% - 15%, LAND SIDESLOPE.

NOTE: EXIT ON DOWNHILL SIDE TO AVOID ROTOR BLADES.

FIGURE 30. TECHNICAL FACTORS IN PZ AND LZ SELECTION.

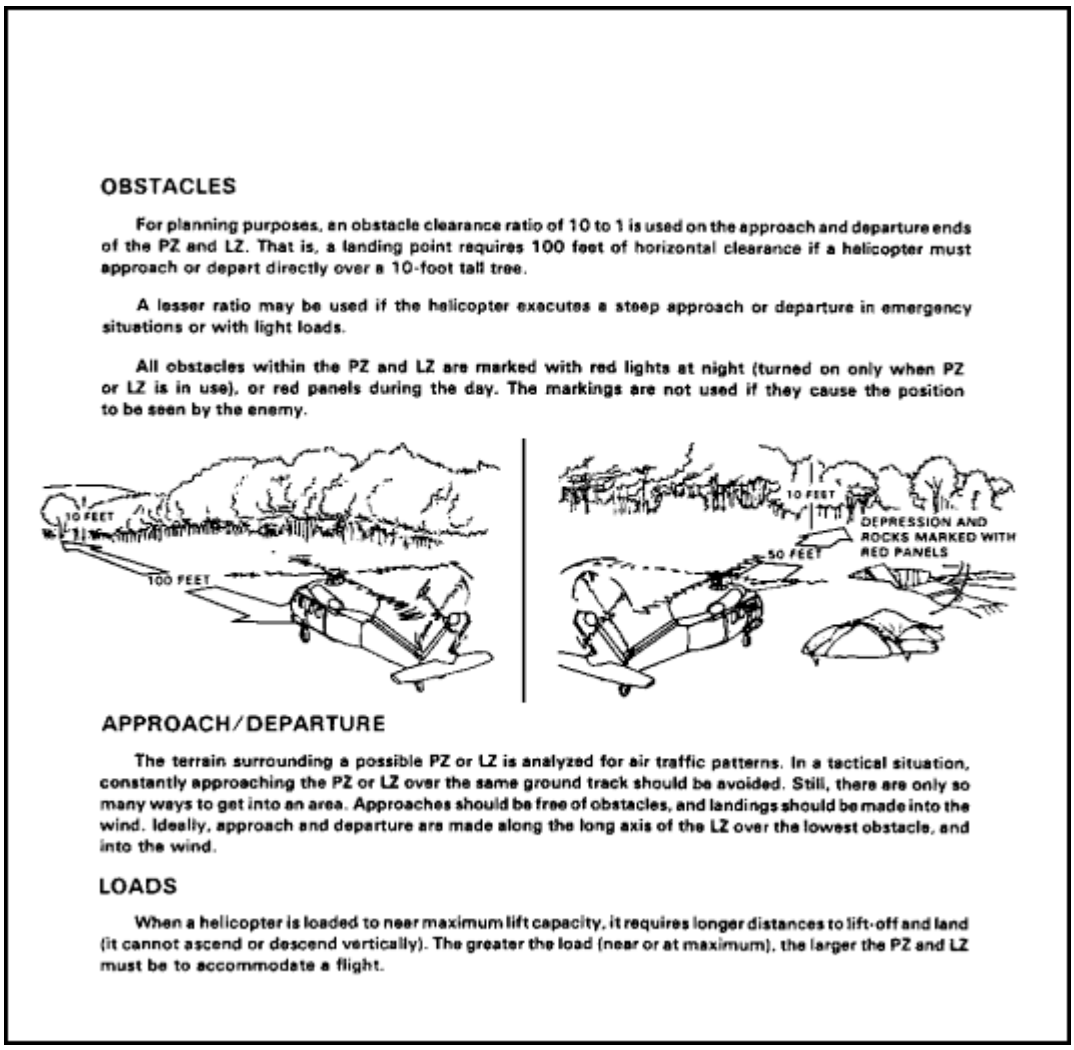

FIGURE 31. TECHNICAL FACTORS IN PZ AND LZ SELECTION (CONTINUED).

Number. Multiple PZs avoid concentrating forces in one area.

Size. Each PZ should accommodate all supporting aircraft at once, if possible.

Proximity to troops. Where possible, the selected PZs should not require extensive ground movement (to the PZ) by troops.

Accessibility. PZs should be accessible to vehicles, to move support assets and infantry.

Vulnerability to attack. Selected PZs should be masked by terrain from enemy observation.

Preparation. It is better to select PZs that are usable as they are, or that require only limited clearing.

The PZs are under the control of a pickup zone control officer.

PICKUP ZONE CONTROL OFFICER

The PZCO organizes, controls, and coordinates operations in PZs selected by the AATFC. (The S4 selects and controls logistical PZs.)

The PZCO:

Forms a control group. To manage operations, the PZCO forms a control group to assist him. It may include air traffic control, subordinate units, and support personnel (manpower to clear the PZ; security). The PZCO selects a central location to position the group. The PZCO is designated by the AATFC, usually the S3 Air. For battalion air assault operations, each company commander appoints a PZCO who operates a company PZ for the battalion. The pickup zone control officer is a rifle platoon leader. Other members of the PZ control party include:

- PZ control noncommissioned officer in charge. He is a platoon sergeant.
- RATELO, with three radios. One radio monitors the combat aviation net for communication with the aircraft. The second radio is used for communication with the platoon subordinate units. The third radio operate in the company command net.
- Chalk-linkup guides. There is one per chalk. Their primary duty is to assist in linkup and movement of chalks from the unit assembly area to the chalk assembly areas. For platoon-size air assault operations, these guides should come from the same chalk squad they are assigned to.
- Lead aircraft signalman. He is responsible for visual landing guidance for the lead aircraft. This signalman could come from the chalk or squad loading on the lead aircraft.
- Slingload teams. A team includes a signalman and hookup men (two soldiers).

Establishes communications. The PZCO should communicate on two primary radio frequencies: one to control movement and loading of units, and one to control aviation elements (combat aviation net). Alternate frequencies are provided as necessary. Radio listening silence during air movement will be maintained on the company and platoon radio nets unless directed otherwise.

When on board the aircraft, all leaders will communicate with the troops using predetermined arm-and-hand signals or stating the message or information on a piece of paper or event map. The aircraft crew communicates using the troop commander's handset.

The UH-60 also has a troop commander's antenna coax connection which is located in the aircraft. This enables the leader to hook up his PRC-77 radio to the FM antenna on the aircraft. This feature allows communication over the unit's command frequency. Radio communications on the LZ will be on the command frequency.

Plans and initiates fire support. He plans fires near PZs to provide all-round protection (from available support) without endangering arrival and departure of troops or aircraft.

Plans and initiates security. The PZCO ensures that adequate security is provided. Security protects the main body as it assembles, moves to the PZ, and is lifted out. Security elements should be provided by other forces if the PZ is within a friendly area. Security comes from AATF resources if it is to be extracted from the objective area.

Clears PZ of obstacles.

Marks the PZ.

PICKUP ZONE MARKING

The PZCO directs the marking of PZs. An effective method is to name the PZ by color and mark it accordingly (by that color) to direct where aircraft will land.

Red is never used to mark an aircraft landing position. It is used to mark landing obstacles such as trees or stumps in the landing area.

Regardless of the type of markers, the PZ is marked to indicate where aircraft are to land and coincides with the selected PZ aircraft formation.

An effective method is to have several individuals in each unit paint (and carry) an extra camouflage cover or a modified (cut to size) VS-17 panel. The colored covers, when displayed, indicate where the lead aircraft lands.

Once the PZs have been selected, getting the troops to them must be planned as well.

Organization of the Pickup Zone

The PZCO lays out the PZ as directed in the plan. If the plan calls for landing to the west in a staggered trail formation with the lead aircraft landing on a spot marked by a smoke grenade or panel markers, the PZ is laid out that way. Pathfinders should assist the PZCO when available (Figure 32).

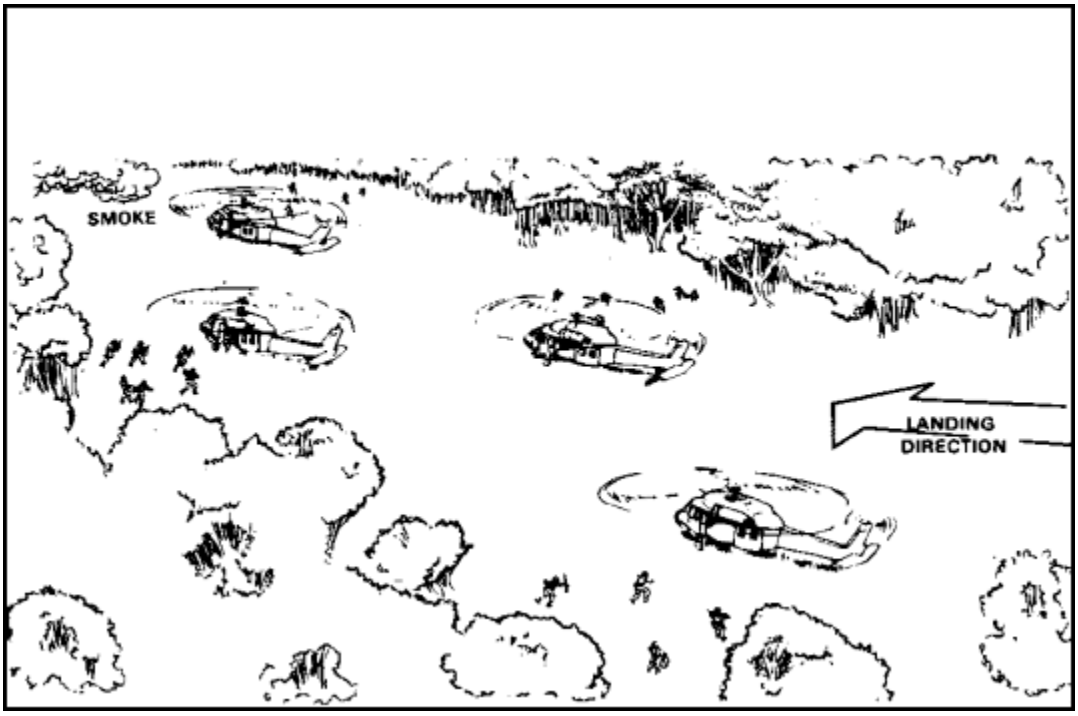

FIGURE 32. ORGANIZATION OF PICKUP ZONE.

It is imperative that aviation elements arrive at the PZ in the formation directed in the plan, so that confusion is minimized during loading. The PZCO, or pathfinder element, assists in loading by ensuring aircraft and personnel are in the proper locations and formation at the correct time. If an aircraft (scheduled for the lift) is unable to complete its mission due to mechanical failure, the PZCO informs the unit commander, who implements the aircraft bump plan.

MOVEMENT TO PICKUP ZONE

Ground and aviation unit movement to the PZ is scheduled so that only the troops to load, and the helicopters to be loaded, arrive at the PZ at the same time. This prevents congestion, preserves security, and reduces vulnerability to enemy actions on the PZ. The troops to be loaded should arrive at their respective loading points prior to the aircraft landing. On the PZCO's signal, aircraft troop loads move by designated routes from their holding area(s) to their loading points on the PZ. If the primary PZ cannot be used, the PZCO advises the unit commander to move to the alternate PZ.

The PZCO contacts the aviation element if there is a PZ change. The AMC contacts PZ control if there has been a change in allowable cargo load, number of aircraft, or formation. During air movement to the PZ, enemy antiaircraft or other fire may be encountered. Air cavalry scout teams may be used to locate and suppress enemy positions prior to the arrival of the lift aircraft. Also, they may be employed on the flank and to the rear of lift aircraft.

The attack helicopter and/or air cavalry scout teams will not normally land on the PZ. When the lift helicopters are to be on the ground for extended periods, the attack helicopter, air cavalry teams may occupy holding areas nearby or return to rearm-refuel sites. The command-andcontrol helicopter is positioned where the command group can see and control critical events.

Strict radio discipline is maintained throughout the operation. Radio silence should not be broken unless absolutely necessary. Radio calls between aircraft are permitted only as a last resort when other signals are not appropriate. The helicopters should use terrain flying techniques en route to the PZ.

To coordinate the movement of units to the PZ, the PZCO -

- Selects troop assembly areas, holding areas, and routes of movement. A holding area is located close to the PZ. It is used only when the assembly area is some distance away and does not allow timely movement to the PZ.
- Determines movement of ground units to the PZ.
- Specifies arrival time(s) and sees that movement of units remains on schedule.

Each unit commander notifies the PZ control party upon his unit's arrival in the holding area. Heavy loads and slingloads should not be programmed in the initial serials. Offloading heavy internal loads is time-consuming and slows troop buildup (Figure 33).

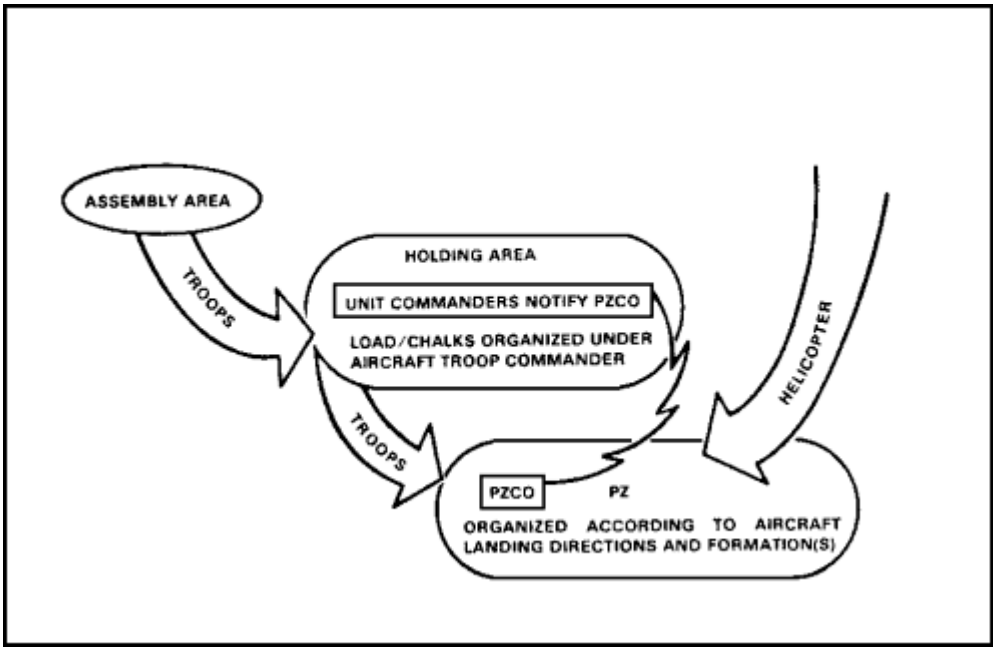

FIGURE 33. MOVEMENT TO PICKUP ZONE.

Each load includes a designated aircraft troop commander responsible for briefing his troops and inspecting the load. He ensures that the load is organized and ready to be loaded as planned. The PZ control party briefing includes the loading points for primary and alternate PZs and the routes to those points. The aircraft troop commander briefs his personnel. As a minimum the briefing includes:

- Loading procedures.
- Bump plan (for individual and/or loads bumps).
- Use of safety belts.
- Preflight safety inspection of soldiers.
- In-flight procedures.
- Downed aircraft procedures.
- Off-loading procedures.
- Movement from the LZ.

To make sure each man and each major item of equipment gets where it needs to go, draw up an airloading table.

AIRLOADING TABLE

At company and lower levels, the airloading table assigns each man and major items of equipment or supplies to a specific aircraft (chalk).

The airloading table is an accountability tool, a loading manifest for each aircraft.

When time is limited, the table can be put on a sheet of paper from a squad leader's notebook. It should list soldiers (by name) and equipment to be loaded on each chalk. These lists are left with a specified representative in the area for consolidation or exchange between aircraft troop commanders (senior person in each aircraft load). This procedure ensures that if an aircraft is lost, a list of personnel and equipment on board is available.

Load planning is, to use a phrase, a way to keep it all together.

LOAD PLANNING

During preparations of the loading tables, unit leaders at all levels attempt to maintain the following:

Tactical Integrity of Units

When planning loads for air assault operations, fire teams and squads are loaded intact on the same aircraft, and platoons in the same serial. This ensures integrity as a fighting unit upon landing. The commander's goal is to load his unit so that unit integrity is maintained at every level.

Self-Sufficiency of Loads

Each unit load should be functional by itself whenever possible.

- Every towed item is accompanied by its prime mover.
- Crews are loaded with their vehicle or weapon.
- Component parts accompany the major items of equipment.
- Ammunition is carried with the weapon.
- Sufficient personnel are on board to unload cargo carried.
- If possible, communicate between chalks without using the aircraft radios.

Tactical Cross-Loading

Loads should be planned so that all leaders, or all crew-served weapons, are not loaded on the same aircraft. Thus, if an aircraft is lost, the mission is not seriously hampered. For example, loading the platoon leader, platoon sergeant, and all the squad leaders on the same helicopter, or loading more than one machine gun team on the same aircraft, are violations of cross-loading principles.

Another consideration is to determine whether internal or external loading is the best delivery method for equipment and supplies. Helicopters loaded internally can fly faster and are more maneuverable. Externally loaded helicopters fly slower and are less maneuverable; however, they can be loaded and unloaded more rapidly than internally loaded helicopters. The method used depends largely on

availability of sling and rigging equipment. Supplies loaded externally, although loaded rapidly, can present problems if the supplies are destined for more than one location or unit.

You must assign priorities to men and equipment. The highest priority gets where it needs to go first. All others arrive as soon as possible if they cannot arrive together. The tool that determines which men and materiel are the most important is the aircraft bump plan.

AIRCRAFT BUMP PLAN

Each aircraft load has a bump sequence designated on its air loading table. Bump priority ensures that the most essential personnel and equipment arrive at the objective area first. It specifies personnel and equipment that may be bumped and delivered later.

If all personnel within the load cannot be lifted, individuals must know who is to offload and in what sequence. This ensures that key personnel are not bumped arbitrarily. Also, bump sequence is designated for aircraft within each serial or flight. This sequence is listed on the air movement table.

This also ensures that key aircraft loads are not left in the PZ. When an aircraft within a serial or flight cannot lift off, and key personnel are on board, they offload and reboard another aircraft that has priority.

If the operation is large enough, an aircraft bump-andstraggler system may be needed.

AIRCRAFT BUMP-AND-STRAGGLER CONTROL

A PZ bump-and-straggler collection point is specified by company or larger units. Personnel not moved as planned report to this location, are accounted for, regrouped, and rescheduled by the PZCO for later delivery to appropriate LZs.

There are three "units of measure" for air movement: the lift, the serial, and the load.

LIFTS, SERIALS, AND LOADS

To maximize operational control, aviation assets are designed into lifts, serials, and loads (Figure 34).

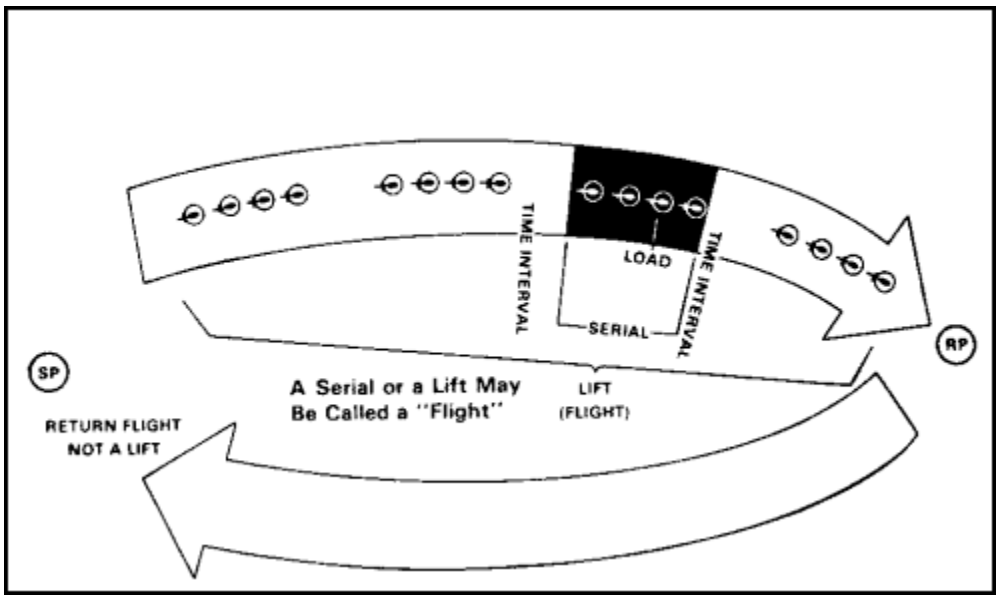

FIGURE 34. LIFTS, SERIALS, AND LOADS.

Lifts

A lift is one sortie of all utility and cargo aircraft assigned to a mission. That is, each time all assigned aircraft pick up troops and/or equipment and set them down on the LZ, one lift is completed. The second lift is completed when all aircraft place their second load on the LZ.

Serials

There may be times when a lift is too large to fly in one formation. In such cases, the lift is organized into a number of serials. A serial is a tactical grouping of two or more aircraft under the control of a serial commander (an aviator), separated from other tactical groupings within the lift by time or space.

Serials may be necessary to maintain effective control of aviation assets. For example, if NOE flight is used, it would be difficult to control 16 aircraft as a single increment. However, a 16-aircraft lift with four serials of four aircraft each could be controlled more easily.

Serials may also be used when the capacity of available PZs or LZs is limited. If there is a lift of 16 aircraft and available PZs and/or LZs will accommodate only four aircraft, it is best to organize into four serials of four aircraft each.

Serials are used to take advantage of available flight routes. If there are several acceptable flight routes, the AATFC may choose to use serials to avoid concentrating his forces along one route. If the commander wants all his forces to land simultaneously in a single LZ, he has the serials converge at a common RP before landing.

With a lift of 16 aircraft and four available flight routes, the AATFC could use four serials of four aircraft each. Each serial would use a different flight route. Each time there is a new lift, a new serial

begins. For example, in lift one there are serials one through four; in lift two, serials again start with one.

Loads

Within each lift there is also a specific number of loads. A load is personnel and/or equipment designated to be moved by a specific aircraft. When planning the air movement, each aircraft within the lift is termed a load. For example, within a lift of 10, there are aircraft loads 1 through 10. For each lift thereafter, there will also be loads 1 through 10. Each aircraft is accounted for within each lift.

An aircraft load may also be referred to as a "chalk load," "chalk number," or "chalk." Loads must also be designated within serials just as they are within lifts. Counting within the serials is continuous up to the total number of aircraft in the lift.

For example, in a lift of 16 aircraft, in lift one, serial one, there may be loads one through four. In lift one, serial two, there may be loads five through eight. In lift one, serial three, there may be loads 9 through 12. Finally, in lift one, serial four, there may be loads 13 through 16.

Having determined who and what is on each aircraft, you can then determine a sequence of departure.

SEQUENCE OF DEPARTURE

The sequence of departure from PZs is based on the mission to be accomplished by each subordinate unit upon landing. Unit priorities are based on the sequence of arrival at their LZs. Units are scheduled to depart (in order) based on en route time to the LZ. For example, if Company A is to land first (at H-hour) and Company B second (at H+5), and Company B is 15 minutes farther (in flight time) from the LZ, it may depart the PZ before Company A.

Lift-Off from the Pickup Zone

When the aircraft are loaded and ready for lift-off, the PZCO signals the flight leader using arm-and-hand or light signals. The flight leader may signal other aircraft by turning on (or off) his navigation lights. Upon landing, the lights are turned on. When they are turned off, the flight lifts off. Members of the PZ control party may also relay the alert to lift off to aircraft in the rear of the formation, or the flight leader simply lifts off and others follow (Figure 35).

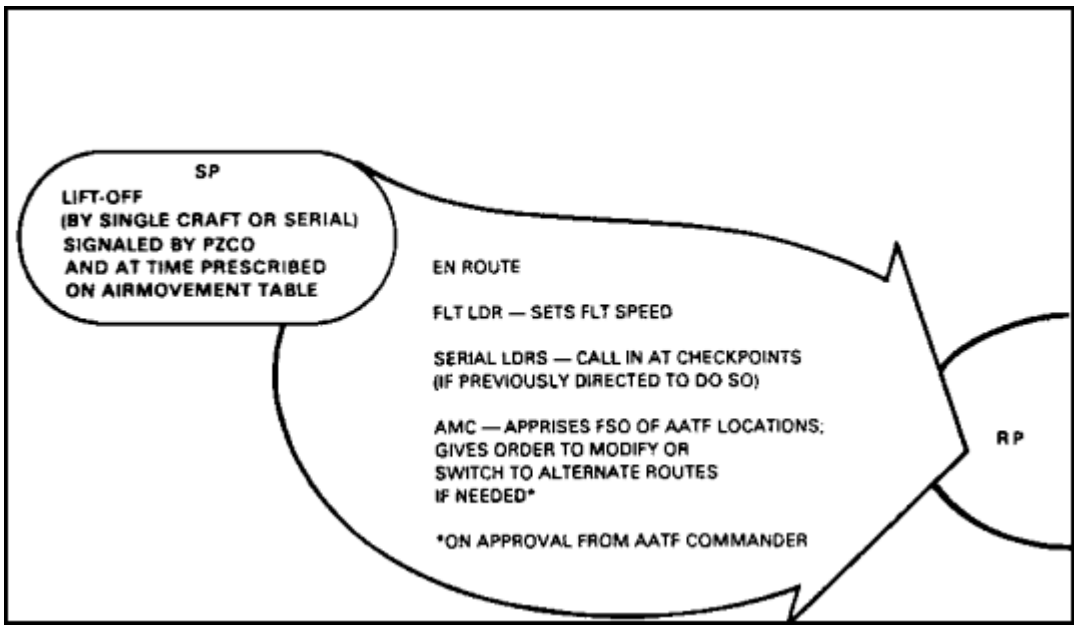

FIGURE 35. MOVEMENT FROM PZ TO RP.

Lift-off should be at the time prescribed in the air movement table. The aircraft will not loiter in the PZ. If they are early, they lift off and alter speed to cross the SP or first ACP on time. This should place the first aircraft of the first lift in the LZ at H-hour.

Lift-off may be by single aircraft or by serial. Under some conditions (dusty PZ, restricted PZ, or high density altitude and no wind), it is best to break serials into smaller increments. When possible, simultaneous lift-off is best for the following reasons:

- It is easier for the attack helicopter unit commander to plan his scheme of maneuver and provide security en route for aircraft.
- AATF control is more positive.
- It reduces the enemy's time to fire at the aircraft.

The flight's speed and rate of climb is adjusted by the flight leader so that all elements form into the en route flight formation at the required altitude.

En Route to the Landing Zone

The AMC predetermines the en route flight speed and the flight leader paces the flight to ensure the flight crosses the SP on time. Radio silence is paramount; however, if directed in the order, serial leaders report to the AMC on passing each communication checkpoint. En route radio calls are made only if the flight is late or if it is required to deviate from the plan.

Troop unit commanders, leaders, and aircraft troop commanders must remain oriented throughout the flight. This is done by following and verifying the flight route using terrain observation, maps, aircraft compass, and aircraft speed.

When a threat is encountered along the flight route, the AATFC gives the order for the AMC to modify or switch to an alternate flight route. The AMC's radio message is brief when shifting aircraft flight route. If the LZ is to be changed, the AATF commander makes the decision and informs the AMC. If the AATFC cannot be contacted, the senior ground commander in the flight will make the decision. It is recommended that the AATFC or an S3 representative fly with the AMC to facilitate command and control.

Security

Air cavalry and attack helicopter units provide security for downed aircraft, route reconnaissance, and other assistance en route (as desired by the AMC). When United States Air Force aircraft are assigned security roles, they may work with attack helicopter units. Security is provided to the flank, front, and rear of the helicopter formation(s).

When performing this role in a medium-to-high threat environment, specially equipped aircraft suppress or destroy surface-to-air missile sites and radar-directed guns. Other USAF aircraft may be used to selectively jam enemy radar and communications signals using jamming transmitters or other methods such as "chaff" (dropping shredded aluminum foil strips to spoil radar).

Ground attack aircraft (A-10, A-7, A-37, or AC-130) may be with, or in advance of, the flight formation, or may be on alert nearby or in planned orbits and support patterns to respond rapidly. Indirect fire weapons provide suppressive fires along the flight routes as planned or as necessary.

If a lift aircraft emergency occurs (forced landing in an unsecure area), the aircraft commander (if time permits) switches his radio to the "guard channel" and transmits a "mayday" in the clear.

The aircraft commander announces his identification, heading, position, nature of emergency, and intentions. The aircraft crew alerts passengers of the emergency and secures loose equipment. The SOP for downed aircraft is then put into effect. The AATFC makes the decision on whether the ground element aboard the aircraft moves to a linkup point and continues the mission or remains with the aircraft.

Landing Operations

When the release point is passed, the serials proceed to the assigned LZ(s). The RP crossing is used to time the lifting and shifting of artillery and close air support strikes, if preparatory fires are used. The RP is also the point at which the aircraft shift to LZ formation, if required (Figure 36).

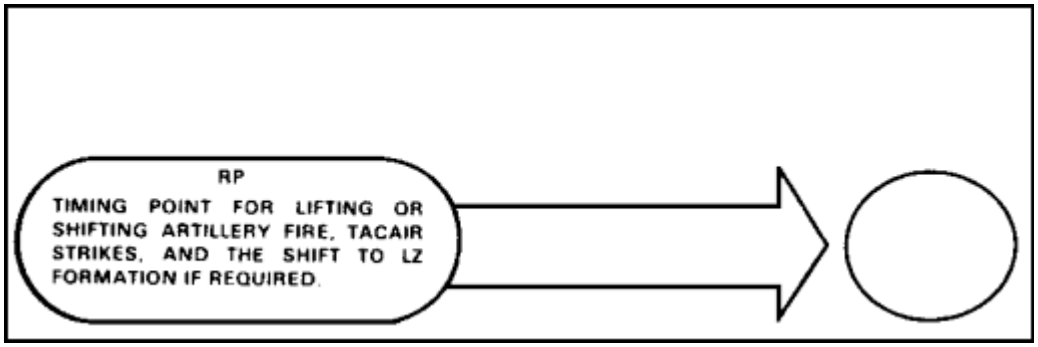

FIGURE 36. MOVEMENT FROM RELEASE POINT TO LANDING ZONE.

Napalm and other incendiary ordnance are not normally used on the LZ and its immediate vicinity just prior to landing, because foliage fire and smoke could endanger aircraft or hamper the mission. Helicopters equipped with smoke generators can be utilized to provide a smoke screen. You must consider wind direction, speed, and enemy air defense along with friendly indirect fire support.

Attack helicopter units and/or teams may be employed in various roles during an LZ operation. They may -

- Precede the lift element into the LZ (by a few minutes) for reconnaissance and/or to provide suppressive fires to prevent a time gap in LZ fires (provided by other support elements).
- Recommend last-minute changes regarding aircraft landing instructions.
- Provide area cover and neutralize known enemy positions, or provide security for lift aircraft while in the LZ area.
- Observe ground approaches to the LZ for possible enemy attacks.

NOTE: After the initial pass, attack helicopters may enter an overwatch flight pattern around the LZ.

Landing Techniques

The AATF lands as planned unless last-minute changes in the tactical situation force the commander to abort or alter the landing. The aviation crew must make every effort to keep the troops in their aircraft informed of the situation, especially of any changes to the original plan. A simultaneous landing is desired so as to place the maximum number of troops on the ground, in a given area, in the shortest possible time. The individual aircraft touchdown points are planned to disembark troops as close as possible to their initial positions.

The operation is accomplished with a minimum number of lifts, each with the maximum number of aircraft the LZ will accommodate. This reduces the exposure time of the aircraft, maintains unit integrity, provides maximum combat power, and gives the enemy less time to react. When separate element landings are dictated because of LZ size, time intervals between elements are kept as short as possible. Ideal timing has an aircraft element landing immediately after the preceding element lifts off.

During landing, troops are most vulnerable. They should disembark rapidly and deploy to carry out assigned missions. When an air evacuation location is designated, it is normally at the approach end of the LZ. This permits continuation of the lift and prompt evacuation of the wounded.

The leaders at each command level account for all personnel and equipment at the LZ and submit appropriate reports to higher headquarters. Key personnel killed, wounded, or missing, are replaced according to unit SOP. Key weapons missing or out of action may require the force to reorganize. After the unit completes its consolidation of the LZ, it is reorganized as necessary.

Safety Measures

All leaders will enforce strict safety measures when working with helicopters. The safety briefing checklist includes, as a minimum:

- Identification tags and earplugs will be worn at all times when near or in an aircraft.
- Helmets with chin straps will be fastened at all times.
- Helicopter safety measures:

  - UH-1Hs and UH-60s are approached from the front, forward of the rear cargo doors. Do not go near the tail of the aircraft.

  - Approach and depart helicopter in the crouched position for extra clearance below the main rotor blade.

  - Move to or from helicopters on sloping ground on the down slope side to avoid the main rotor.
- Shirt sleeves will be rolled down whenever working with aircraft.
- M16 rifles will be carried with the muzzle pointed downward, pistol grip forward, bolt closed, magazine in weapon, and weapon on safe. Rounds will not be chambered, bayonets will not be fixed.
- Hand grenades will be secured.
- Short antennas will be bent completely down and long antennas will be tied down when using radios in the proximity of helicopters.
- Seatbelts are fastened upon entering the helicopter and left buckled until the crew chief signals to exit the aircraft.
- In the event of a forced landing, all personnel will lean forward with their heads down until the aircraft comes to rest. No one will exit the aircraft until the main rotor has stopped.

Command and Control Helicopter

At the RP, the command and control helicopter moves into position (employing terrain flying) to observe and communicate with assault elements. In avoiding enemy weapons, the pilot uses popup

techniques to observe the activities. The AATFC will determine where he can best influence the action, by remaining on the aircraft or joining the ground forces.

Moving Vehicle-Mounted TOW by Helicopter

Transporting the TOW and its carrier around the battlefield by helicopter provides the commander with the means to rapidly emplace or shift antiarmor assets. For those units that are equipped with the M151, or M966 high-mobility, multi-purpose, wheeled vehicle (HMMWV), two UH-60 helicopters are required to transport the system.

In units equipped with M151 vehicles, one helicopter carries the squad, and the weapon system, and slingloads one M151, while the other helicopter slingloads the M151 and trailer. In units equipped with the M966, one helicopter carries the weapon system, squad, and ammunition, while the other helicopter carries the M966 by slingload.

NOTE: Limitations imposed by conditions of density altitude may preclude the UH-60 being able to lift the M966. In this case, the squad and weapon system would be transported by the helicopter while the M966 is moved over land by the driver to link up with the rest of the squad.

In units equipped with the M901 or M113, the TOW system must be removed from the vehicle. The dismounted system, squad leader, gunner, and assistant gunner can be moved by the UH-60. The driver of the M901 or M113 then moves the vehicle over land to link up with the rest of the squad. When transporting by CH-47 helicopter, the helicopter can lift either the squad's two M151s or one M966 and carry the squad as well. If the unit is equipped with the M901 or M113, movement is the same as when using the UH-60.

Loading and Transporting the TOW System in the UH-60

The squad leader sits where he can see the LZ during approach and remains terrain-oriented. The assistant gunner sits on the same side next to the squad leader. This speeds up weapon emplacement since the squad leader carries the tripod and sight, and the assistant gunner carries the traversing unit. The TOW components and missiles are placed in the aircraft to be readily available to the soldier responsible for carrying them (Figure 37).

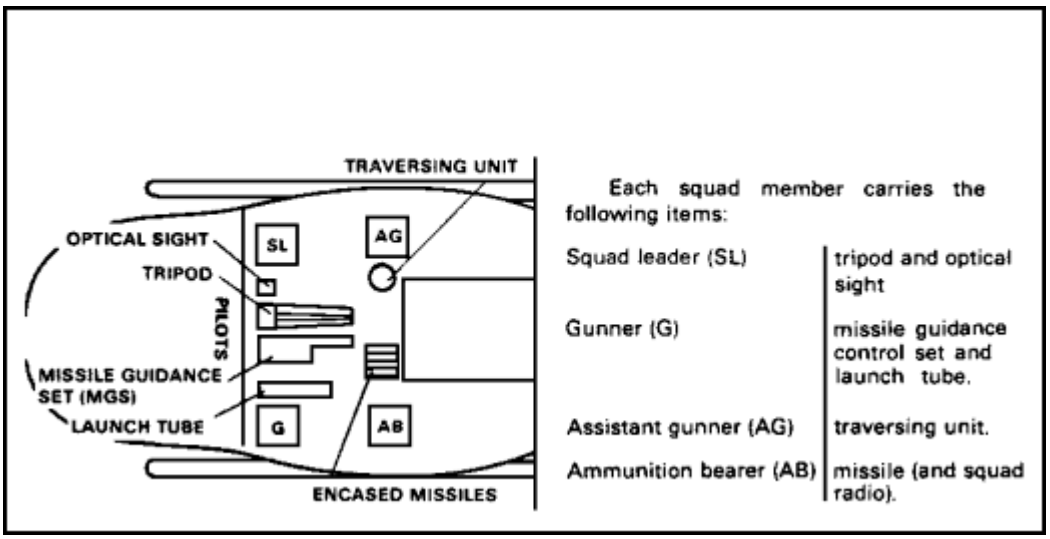

FIGURE 37. TOW SQUAD LOADED IN UH-60.

The additional missiles are carried in the aircraft. They are stockpiled on the landing site for the squad to retrieve. When firing positions are selected, the missiles are collected and moved to those positions. The squad can move the TOW system short distances, when dismounted. The TOW system is landed and picked up as close to its firing position as possible because of the difficulty of manually transporting the TOW and missiles over an extended distance.

Learning Event 5:
IDENTIFY THE CHARACTERISTICS AND PLANNING CONSIDERATIONS FOR A STAGING PLAN

The staging plan is the last of the five plans, and follows from the loading plan.

GENERAL

The staging plan is based on the loading plan. It prescribes the arrival time of ground units (troops, equipment, and supplies) at the PZ in the proper order for movement. Prior to arrival of the aircraft, the PZ must be secured, PZ control party positioned, and the troops and equipment positioned in a unit assembly area.

PROCEDURES

Loads must be ready before aircraft arrive at the PZ. Usually, ground units are expected to be in position in the PZ 15 minutes before aircraft arrive. The staging plan also restates the PZ organization, defines flight routes to the PZ, and provides instructions for linkup of all aviation elements. Air-to-air linkup of aviation units should be avoided, especially at night when night vision goggles are being used.

Occupation of Unit Assembly Area

The unit leaders should accomplish the following actions upon the occupation of a unit assembly area:

- Maintain all-round security of the assembly area.
- Maintain communications.
- Organize troops and equipment into chalks and loads in accordance with the unit air movement plan.
- Conduct safety briefings and equipment check of troops.
- Establish priority of loading for each man and identify bump personnel.
- Brief on the location of the straggler control points.

Movement to and Occupation of Chalk Assembly Area

Linkup guides from the PZ control party will meet with designated units at assembly area and coordinate movement chalks to a release point. As the chalks arrive at the release point, chalk guides will move each chalk to its assigned chalk assembly area. The same guide may be used to move the unit from the unit assembly area to the chalk assembly area, if reduced personnel are required. No more than three chalks should be located in the chalk assembly area at one time if they are part of a larger force.

In order to maintain security at the PZ, noise and light discipline will be maintained throughout the entire movement. No personnel should be allowed on the PZ unless loading aircraft, rigging vehicles for slingload, or directed by PZ control. While remaining in the assigned chalk order, each soldier is assigned a security (firing) position by the chalk leader and emplaced in the prone position, weapon at ready, and facing away from PZ to provide immediate close-in security. See Figure 38, for an example of a large, one-sided PZ. Figure 39, is an example of a small, two-sided PZ with unit and chalk assembly areas.

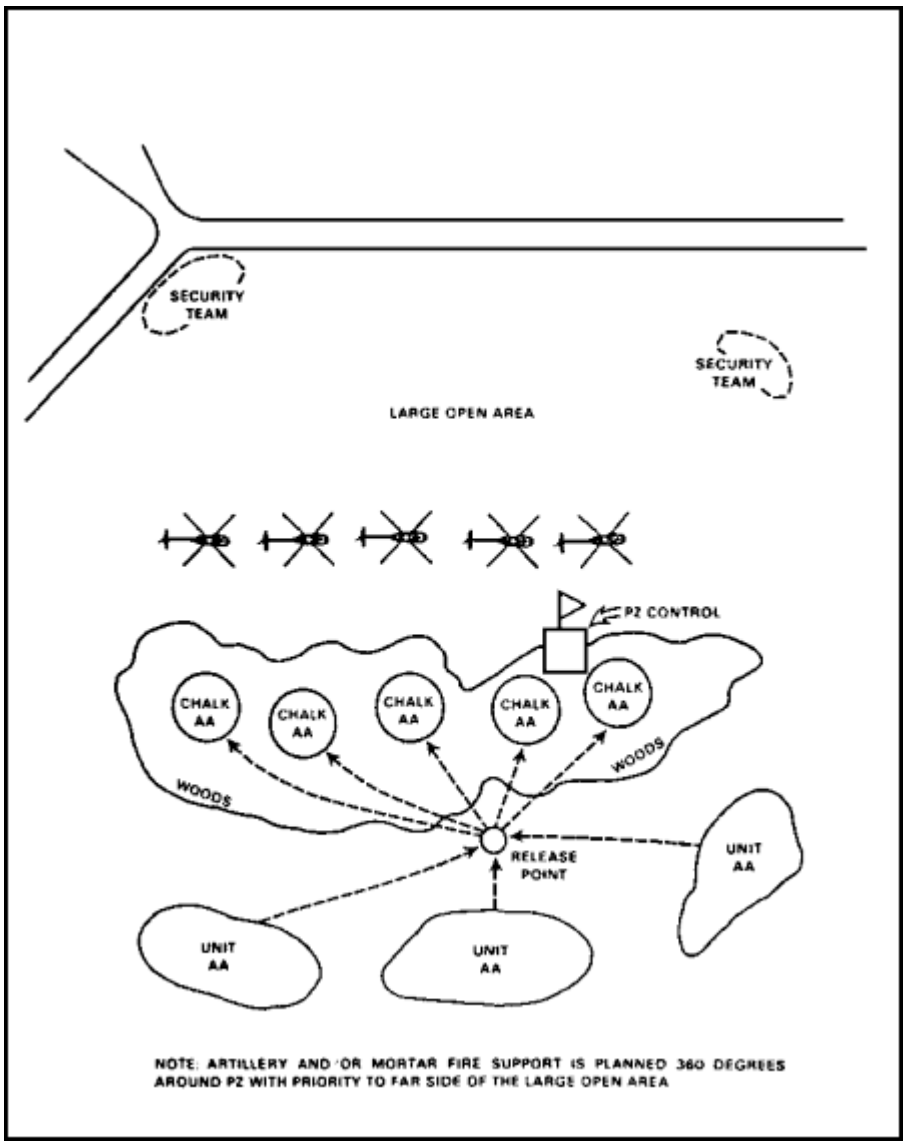

FIGURE 38. LARGE, ONE-SIDED PZ.

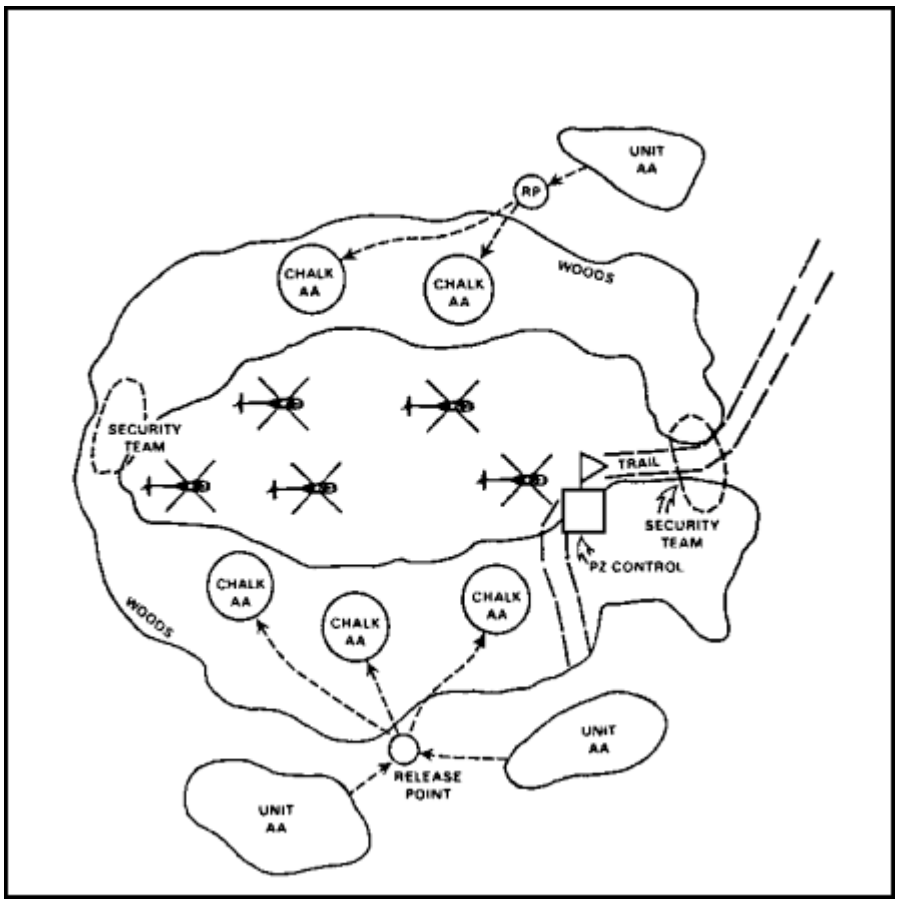

FIGURE 39. SMALL, TWO-SIDED PZ.

While in the chalk assembly area, units should adhere to the following principles for loading the aircraft:

- Maintain tactical integrity by keeping fire teams and squads intact.
- Maintain self-sufficiency by loading a weapon and its ammunition on the same aircraft (Dragon).
- Ensure key men, weapons, and equipment are cross-loaded among aircraft to prevent the loss of control, or all of a particular asset, if an aircraft is lost.
- Prior to loading, ensure all troop gear is tied down and checked; short antennas are placed in radios, folded down, and secured.
- Squad and team leaders check the equipment of their men to ensure it is complete and operational.
- Radios are turned on and communications check performed (unless directed otherwise).
- A specific aircraft seat is assigned to each man.

PZ Closure

During platoon air assault operations the platoon sergeant is responsible for ensuring all personnel and equipment are loaded (clear the PZ) and security is maintained.

Single lift. If required, the platoon sergeant positions himself at the last aircraft and collects "bumped" personnel. He will be the last man to load the aircraft. Once aboard the aircraft, the platoon sergeant (PSG) will notify the crew chief and/or the AMC that all personnel and equipment are loaded. The aircraft door gunners will provide close-in security.

Multiple lift. The duties of the PSG are the same as for a single lift. During multiple lifts, the security teams will maintain security of the PZ and the last element to depart with the PSG. Depending on the initial location(s) of the security teams, repositioning closer to the PZ may be necessary. To enhance security and minimize the movement required by the teams, the aircraft will land as close to the security team positions as possible.

UH-60 Loading Sequence, Split Chalk

The chalk leader (squad leader) initiates movement once the aircraft has landed. The farside and nearside groups move to the aircraft in file with the chalk leader (CL) always leading (Figure 40). The chalk leader should:

- Ensure all personnel know which aircraft and which position to load.
- Ensure all personnel wear or carry rucksacks on the aircraft.
- Notify the crew chief when all chalk members are on board and ready for lift-off.

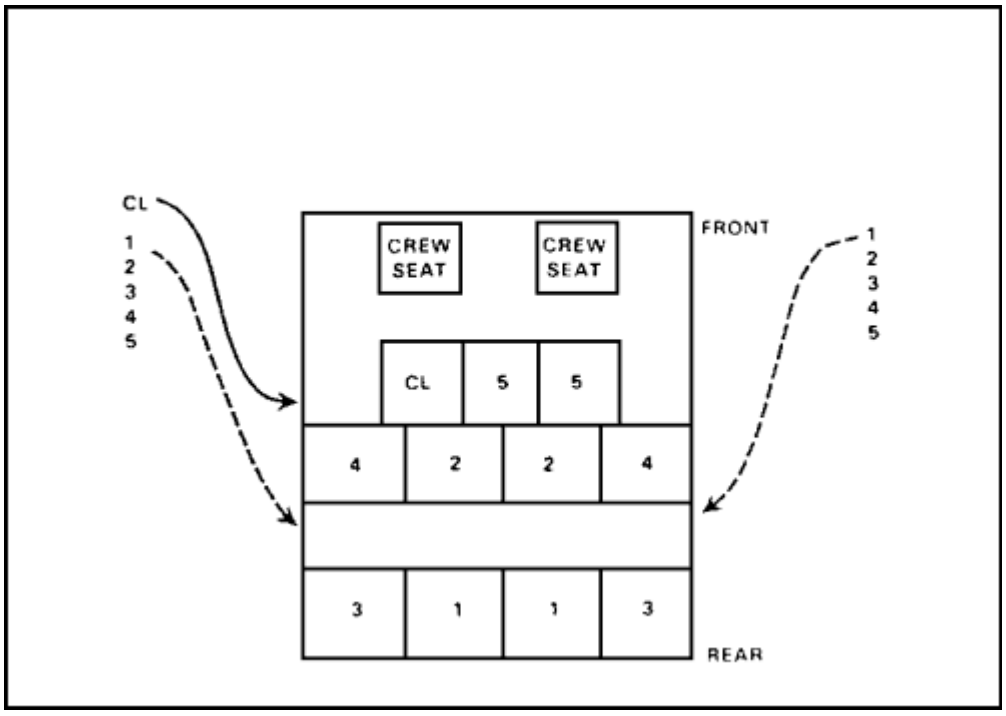

FIGURE 40. UH-60 LOADING SEQUENCE, SPLIT CHALK.

All personnel will buckle up as soon as they are seated in their assigned seats. The chalk leader will always sit in the left front seat unless a platoon leader or company commander is on the same aircraft. The chalk leader will hand the chalk card to the pilot and answer any questions the pilot may have, utilizing the aircraft intercommunication (troop commander's) handset.

UH-60 Loading Sequence, Whole Chalk

The chalk leader (squad leader) initiates movement once the aircraft has landed. The farside and nearside groups move to the aircraft in file with the number 1 man leading the load to the appropriate side (Figure 41).

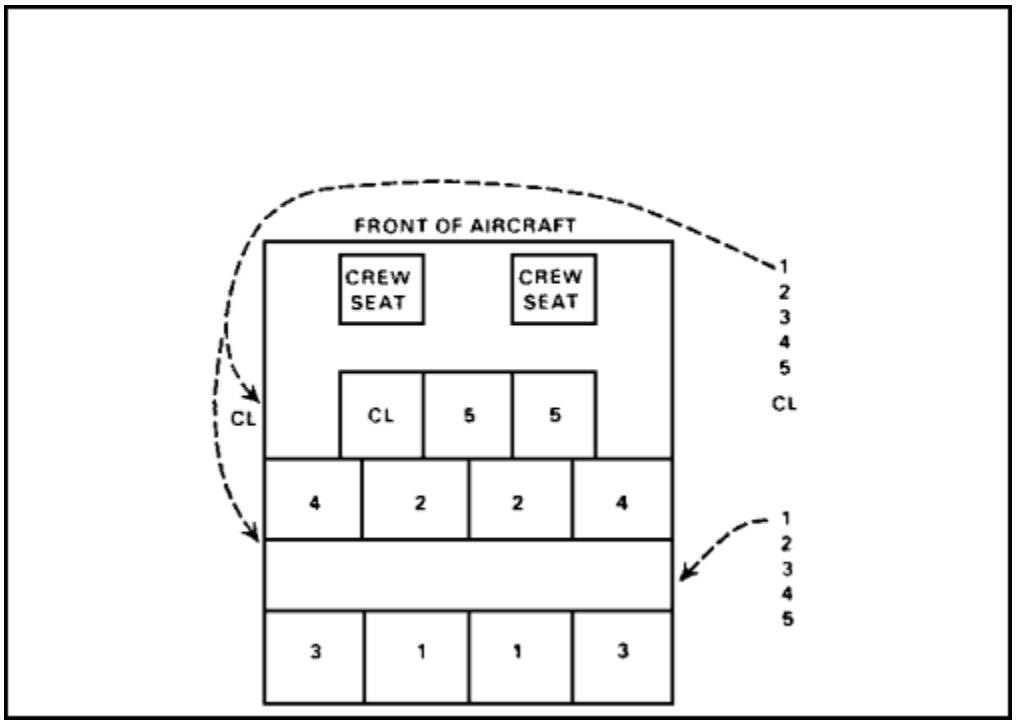

FIGURE 41. UH-60 LOADING SEQUENCE, WHOLE CHALK.

NOTE: The farside group will always move around to the front of the aircraft.

The chalk leader will stop at the nearside of the aircraft to ensure the nearside group loads properly; then he moves around the front of the aircraft to the far side and checks the other half of the chalk. All personnel will buckle up as soon as they are seated in the correct seat. The chalk leader will hand the chalk card to the pilot and answer any questions the pilot may have, utilizing the aircraft's intercommunication (troop commander's) handset.

LANDING ZONE OPERATION

There are priority of actions upon a landing zone. The PSG must ensure that the operation goes according to plan. The priority of actions are listed as follows:

Unloading

Unloading of the aircraft does not begin until directed by the crew chief or pilot (Figure 42). Once the aircraft has landed, personnel will unbuckle seatbelts and exit aircraft as fast as possible with all equipment.

- Before leaving the aircraft, the chalk leader will obtain the landing direction from the pilot if not determined during the approach into the LZ. This will aid in orientation to the LZ, particularly at night.
- Individuals will move 15 to 20 meters out from the side of the aircraft and assume the prone position facing away from the aircraft, weapons at the ready, until the aircraft has departed the LZ.

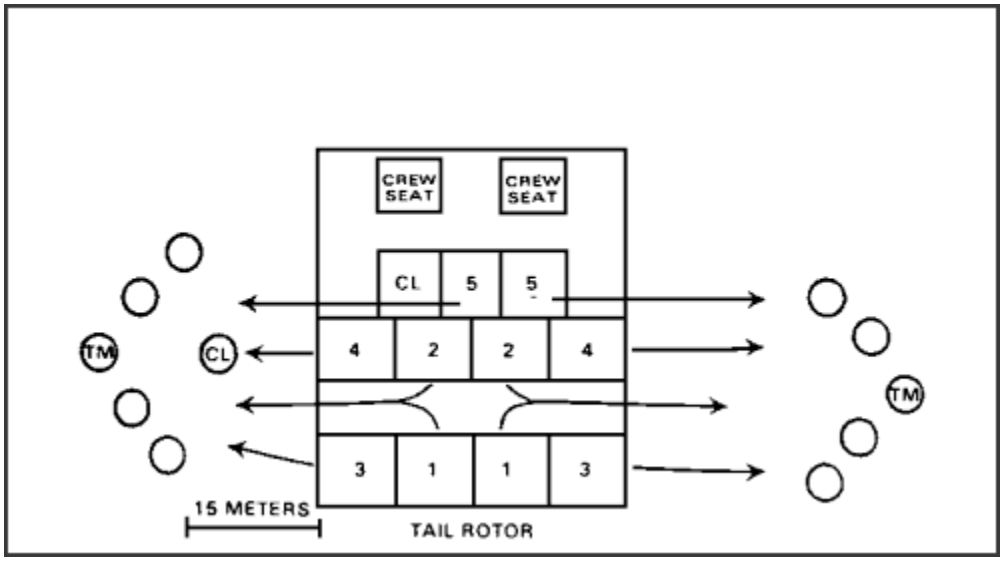

FIGURE 42. UH-60 UNLOADING PROCEDURES.

Immediate Action on Hot LZ

If the decision is made to use a hot LZ, or contact is made upon landing, have the troops dismount quickly and move 15 to 20 meters away from the aircraft. The troops should immediately return the enemy fire. This allows the aircraft to depart quickly.

- If the contact is similar to a far ambush, troops will fire and maneuver off the LZ to the closest side offering cover and concealment. If troops are engaged from nearby enemy positions, they treat it as a near ambush by immediately returning fire. Soldiers who consider themselves in the kill zone may assault the enemy position(s) or attempt to get out of the kill zone. Soldiers not in the kill zone will provide supporting fire to support the movement of troops in the kill zone.
- The squad or platoon leader will call for fire support if it is available. Once disengaged from the enemy force, the squad or platoon leader will move the unit to a covered and concealed position. They account for personnel and equipment, and assess the situation as to whether or not the unit can continue the mission.

Chalk Assembly on Cold LZ

Upon unloading from the aircraft, the chalk leader (squad leader) will move the chalk to its predetermined locations using traveling overwatch movement techniques. The troops will move at a fast pace to the nearest concealed position. When the concealed assembly point is reached, the chalk leader makes a quick count of personnel and equipment, and then proceeds with the mission.

CONCLUSION

This lesson has presented the basics of the ground tactical plan, the landing plan, the air movement plan, the loading plan, and the staging plan, the reverse-planning process which creates an air assault operations plan.

PRACTICE EXERCISE 2

The following items will test your knowledge of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any question incorrectly, study again that part of the lesson which contains the portion involved.

GENERAL SITUATION: You are the Assistant S3 (Plans) of a brigade in an infantry division. The brigade has been made the core of an air assault task force (AATF) as part of a field training exercise (FTX). You are starting to write the plans for the air assault operation.

1. You, as the S3 plans officer, are preparing the ground tactical plan for the FTX. In order to capitalize on the element of surprise characterized by air assault operations, you will attempt to have the AATF

   ○ A. land away from the objective and build up combat power.
   ○ B. land recon elements close to the objective and the remainder of the AATF away from the objective.
   ○ C. land on or as close to the objective as possible.

2. After preparing the ground tactical plan, you begin drafting the landing plan. One area in which you must pay particular attention when preparing the landing plan is cover and concealment. When selecting the LZs, you must ensure that they

   ○ A. deny the enemy observation of air elements going into or departing the LZ.
   ○ B. provide immediate concealment for the troops as they exit the aircraft.
   ○ C. provide immediate cover for the troops as they exit the aircraft.

3. While preparing the landing plan, you are deliberating on whether to select single or multiple LZs for the AATF. In order to do this, you want to compare some of the advantages of selecting single and multiple LZs by placing a 1 in the space provided if it is an advantage of a single LZ and a 2 if it is an advantage of multiple LZs.

   ☐ Facilitates control of the operation.
   ☐ Concentrates supporting fires in and around the LZ.
   ☐ Reduces the enemy's ability to detect and react to the initial lift.
   ☐ Centralizes any required resupply operation.
   ☐ Forces the enemy to fight in more than one direction.

4. The success of the ground tactical plan that you have just developed relies on massing combat power close to the objective area as quickly as possible. This will mean landing a lot of the helicopters in a short period of time. As you develop the landing plan, this requirement suggests that you should

- ○ A. select a single LZ close to the objective.
- ○ B. select multiple LZs close to the objective.
- ○ C. brief pilots to hover and let the troops jump out to save time.

5. You are beginning to prepare the air movement plan and are developing the flight routes. You tentatively select the routes from a map reconnaissance. The flight routes are

- ○ A. determined by a start point and a release point.
- ○ B. planned in coordination with the S4 for best resupply routes.
- ○ C. planned so they are short as possible.

6. Along with the air mission commander, you are developing the flight routes within the air movement plan. While the flight route is in use, you do not desire any other aircraft flying through your airspace nor do you desire artillery firing through the airspace. Therefore, you are

- ○ A. developing a flight axis.
- ○ B. developing a restricted flight route.
- ○ C. developing a flight corridor.

7. As the S3 plans officer you are concentrating on the loading plan for an air assault operation for a battalion-size element. In most cases, loading plans for units smaller than a brigade are

- ○ A. drafted by the plans officer.
- ○ B. established by SOPs.
- ○ C. established by the battalion commander.

8. You are briefing a lieutenant assigned as the PZ control officer. You inform the lieutenant that in addition to organizing and controlling operations in the PZ that he is also responsible for

- ○ A. coordinating the operations.
- ○ B. drafting the loading plan.
- ○ C. briefing the aircrews.

9. While concentrating on the loading plan, you decide that there are too many aircraft in the first lift in order to maintain proper control. Therefore, you

- ○ A. organize the lift into a number of loads.
- ○ B. organize the lift into a number of groups.
- ○ C. organize the lift into a number of serials.

10. The last plan you are developing is the staging plan. You must formulate this plan so that the aircraft are not waiting on the PZ for the troops to arrive. Therefore, you plan for the troops to be

- ○ A. positioned for pickup 15 minutes before the aircraft arrive.
- ○ B. moving toward the PZ 6 hours before the aircraft arrive.
- ○ C. arriving in the area 2 hours before the aircraft arrive.